Appendix B

AIR QUALITY AND CLIMATE CHANGE TECHNICAL REPORT

HELIX
Environmental Planning

Westfield Carlsbad Project

Air Quality and Climate Change Technical Report

August 20, 2012

Prepared for:
City of Carlsbad
Planning Division
1635 Faraday Avenue
Carlsbad, CA 92008-7314

Prepared by:
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La Mesa, CA 91942

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TABLE OF CONTENTS

Page

TABLE OF CONTENTS (cont.)

LIST OF TABLES

LIST OF ATTACHMENTS

1.0 INTRODUCTION

This report presents an assessment of potential air pollutant and climate change impacts associated with the Westfield Carlsbad Project (Project or Proposed Project). Westfield Plaza Camino Real, an existing Super Regional Shopping Center, is located in the northwest portion of the City of Carlsbad (City) on approximately 97 acres at the city's northern entrance along El Camino Real (Project Site), and currently has 1,151,092 square feet (sf) of gross leasable area (GLA).

The Project involves the demolition, reconfiguration, and/or reconstruction of approximately 225,631 sf of existing commercial/retail space (mainly the existing Robinson's-May building), and the development of up to approximately 35,417 sf of net new GLA, for a total of approximately 1,186,509 sf of GLA (existing plus proposed). The proposed revitalization is primarily focused on the easterly half of the site adjacent to El Camino Real and the southerly one-third of the site adjacent to Marron Road, displacing roughly 471 net surface parking stalls and creating new internally and externally oriented retail space, restaurant pads sites, theater, and other retail/lifestyle/entertainment commercial uses. Re-use of the unoccupied former Robinsons-May building would include reconstructed and reconfigured uses in the form of a new movie theater, gym, and retail and restaurant spaces. The Project will primarily be built within the existing building envelopes, with a small amount of new building area adjacent to the existing envelopes and in outparcel locations.

The demolition, reconfiguration, and/or reconstruction of the mall would occur during calendar years 2013 and 2014. The Project is expected to reach full buildout and completion of construction in year 2015. The air quality and climate change evaluation in this report addresses the potential for air emissions during construction and after full buildout of the Project.

2.0 EXISTING CONDITIONS

2.1 CLIMATE AND METEOROLOGY

The climate in southern California, including the San Diego Air Basin (SDAB), is controlled largely by the strength and position of the subtropical high-pressure cell over the Pacific Ocean. Areas within 30 miles of the coast experience moderate temperatures and comfortable humidity. Precipitation is limited to a few storms during the winter season. The climate of San Diego County is characterized by hot, dry summers and mild, wet winters.

Wind monitoring data recorded at the Oceanside Marina Station indicates that the predominant wind direction in the vicinity of the Proposed Project is from the west. Average wind speed in the vicinity is approximately 5.9 miles per hour (mph). The annual average temperature in the Project area is approximately 53 degrees Fahrenheit (ºF) during the winter and approximately 68ºF during the summer. Total precipitation in the Project areas averages approximately 10.5 inches annually. Precipitation occurs mostly during the winter and relatively infrequently during the summer (Western Regional Climate Center 2010).

The atmospheric conditions of the SDAB contribute to the region's air quality problems. Due to its climate, the SDAB experiences frequent temperature inversions (temperature increases as altitude increases). Temperature inversions prevent air close to the ground from mixing with the air above it. As a result, air pollutants are trapped near the ground. During the summer, air quality problems are created due to the interaction between the ocean surface and the lower layer of the atmosphere, creating a moist marine layer. An upper layer of warm air mass forms over the cool marine layer, preventing air pollutants from dispersing upward. Additionally, hydrocarbons and nitrogen dioxide (NO_2) react under strong sunlight, creating smog. Light, daytime winds, predominately from the west, further aggravate the condition by driving the air pollutants inland, toward the foothills. During the fall and winter, air quality problems are created due to carbon monoxide (CO) and NO_2 emissions. High NO_2 levels usually occur during autumn or winter, on days with summer-like conditions. (San Diego Air Pollution Control District [SDAPCD] 2008a).

High air pollution levels in coastal communities of San Diego often occur when polluted air from the South Coast Air Basin, particularly Los Angeles, travels southwest over the ocean at night, and is brought onshore into San Diego by the sea breeze during the day. Smog transported from the Los Angeles area is a key factor on more than 50 percent of the days San Diego exceeds clean air standards. Ozone (O_3) and precursor emissions are transported to San Diego during relatively mild Santa Ana weather conditions. However, during strong Santa Ana weather conditions, pollutants are pushed far out to sea and miss San Diego. When smog is blown in from the SDAB at ground level, the highest O_3 concentrations are measured at coastal and near-coastal monitoring stations. When the transported smog is elevated, coastal sites may be passed over, and the transported O_3 is measured further inland and on the mountain slopes.

2.2 AIR POLLUTANTS OF CONCERN

2.2.1 Criteria Air Pollutants

Federal and state laws regulate the air pollutants emitted into the ambient air by stationary and mobile sources. These regulated air pollutants are known as "criteria air pollutants" and are categorized as primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources. CO, reactive organic gases (ROG), nitrogen oxides (NO_X), sulfur dioxide (SO_2), and most inhalable particulate matter (particulate matter with a diameter of 10 microns or less [PM_{10}], particulate matter with a diameter of 2.5 microns or less [$PM_{2.5}$]) including lead (Pb) and fugitive dust; are primary air pollutants. Of these CO, SO_2, PM_{10}, and $PM_{2.5}$ are criteria pollutants. ROG and NO_X are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. O_3 and NO_2 are the principal secondary pollutants.

2.2.2 Toxic Air Contaminants

The public's exposure to toxic air contaminants (TACs) is a significant environmental health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an

increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant pursuant to subsection (b) of Section 112 of the Federal Act (42 USC Sec. 7412[b]) is a TAC. Under State law, the California Environmental Protection Agency (CalEPA), acting through the California Air Resources Board (CARB), is authorized to identify a substance as a TAC if it determines the substance is an air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health.

Cancer Risk. One of the primary health risks of concern due to exposure to TACs is the risk of contracting cancer. The carcinogenic potential of TACs is a particular public health concern because it is currently believed by many scientists that there is no "safe" level of exposure to carcinogens, that is, any exposure to a carcinogen poses some risk of causing cancer. Health statistics show that one in four people will contract cancer over their lifetime, or 250,000 in a million, from all causes, including diet, genetic factors, and lifestyle choices.

Noncancer Health Risks. Unlike carcinogens, for most noncarcinogens it is believed that there is a threshold level of exposure to the compound below which it will not pose a health risk. The CalEPA and California Office of Environmental Health Hazard Assessment (OEHHA) have developed reference exposure levels (RELs) for noncarcinogenic TACs that are health-conservative estimates of the levels of exposure at or below which health effects are not expected. The noncancer health risk due to exposure to a TAC is assessed by comparing the estimated level of exposure to the REL. The comparison is expressed as the ratio of the estimated exposure level to the REL, called the hazard index (HI).

2.2.3 Greenhouse Gas Emissions

Parts of the Earth's atmosphere act as an insulating blanket of just the right thickness, trapping sufficient solar energy to keep the global average temperature in a suitable range. The 'blanket' is a collection of atmospheric gases called 'greenhouse gases' (GHGs) based on the idea that the gases also 'trap' heat like the glass wall of a greenhouse. These gases, mainly water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), O_3, and chlorofluorocarbons (CFCs), all act as effective global insulators, reflecting back to earth heat and infrared radiation. Human activities such as producing electricity with fossil fuels and driving vehicles have contributed to the elevated concentration of these gases in the atmosphere. This in turn, is causing the Earth's temperature to rise. A warmer Earth may lead to changes in rainfall patterns, much smaller polar ice caps, a rise in sea level, and a wide range of impacts on plants, wildlife, and humans.

2.3 CRITERIA POLLUTANTS

2.3.1 Background

Criteria pollutants are defined by state and federal law as a risk to the health and welfare of the general public. The following specific descriptions of health effects for each of these air

pollutants associated with Project construction and operations are based on U.S. Environmental Protection Agency (EPA) (2007) and CARB (2009).

Ozone. O_3 is considered a photochemical oxidant, which is a chemical that is formed when ROGs and NOx, both by-products of fuel combustion, react in the presence of ultraviolet light. O_3 is considered a respiratory irritant and prolonged exposure can reduce lung function, aggravate asthma and increase susceptibility to respiratory infections. Children and those with existing respiratory diseases are at greatest risk from exposure to O_3.

Carbon Monoxide. CO is a product of fuel combustion, and the main source of CO in the SDAB is from motor vehicle exhaust. CO is an odorless, colorless gas. CO affects red blood cells in the body by binding to hemoglobin and reducing the amount of oxygen that can be carried to the body's organs and tissues. CO can cause health effects to those with cardiovascular disease, and can also affect mental alertness and vision.

Nitrogen Dioxide. NO_2 is also a by-product of fuel combustion, and is formed both directly as a product of combustion and in the atmosphere through the reaction of nitrogen oxide (NO) with oxygen. NO_2 is a respiratory irritant and may affect those with existing respiratory illness, including asthma. NO_2 can also increase the risk of respiratory illness.

Respirable Particulate Matter and Fine Particulate Matter. Respirable particulate matter, or PM_{10}, refers to particulate matter (PM) with an aerodynamic diameter of 10 microns or less. Fine particulate matter, or $PM_{2.5}$, refers to particulate matter with an aerodynamic diameter of 2.5 microns or less. Particulate matter in these size ranges have been determined to have the potential to lodge in the lungs and contribute to respiratory problems. PM_{10} and $PM_{2.5}$ arise from a variety of sources, including road dust, diesel exhaust, fuel combustion, tire and brake wear, construction operations and windblown dust. PM_{10} and $PM_{2.5}$ can increase susceptibility to respiratory infections and can aggravate existing respiratory diseases such as asthma and chronic bronchitis. $PM_{2.5}$ is considered to have the potential to lodge deeper in the lungs.

Sulfur dioxide. Sulfur dioxide (SO_2) is a colorless, reactive gas that is produced from the burning of sulfur-containing fuels such as coal and oil, and by other industrial processes. Generally, the highest concentrations of SO_2 are found near large industrial sources. SO_2 is a respiratory irritant that can cause narrowing of the airways leading to wheezing and shortness of breath. Long-term exposure to SO_2 can cause respiratory illness and aggravate existing cardiovascular disease.

Lead. Lead (Pb) in the atmosphere occurs as PM. Pb has historically been emitted from vehicles combusting leaded gasoline, as well as from industrial sources. With the phase-out of leaded gasoline, large manufacturing facilities are the sources of the largest amounts of Pb emissions. Pb has the potential to cause gastrointestinal, central nervous system, kidney and blood diseases upon prolonged exposure. Pb is also classified as a probable human carcinogen.

Sulfates. Sulfates are the fully oxidized ionic form of sulfur. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to SO_2 during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features. The CARB's sulfates standard is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilatory function, aggravation of asthmatic symptoms and an increased risk of cardio-pulmonary disease. Sulfates are particularly effective in degrading visibility, and due to fact that they are usually acidic, can harm ecosystems and damage materials and property.

Hydrogen Sulfide. Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation. Breathing H_2S at levels above the standard would result in exposure to a very disagreeable odor. In 1984, a CARB committee concluded that the ambient standard for H_2S is adequate to protect public health and to significantly reduce odor annoyance.

Vinyl Chloride. Vinyl chloride (VC), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most VC is used to make polyvinyl chloride (PVC) plastic and vinyl products. VC has been detected near landfills, sewage plants and hazardous waste sites, due to microbial breakdown of chlorinated solvents. Short-term exposure to high levels of in air causes central nervous system effects, such as dizziness, drowsiness and headaches. Long-term exposure to VC through inhalation and oral exposure causes liver damage. Cancer is a major concern from exposure to VC via inhalation. VC exposure has been shown to increase the risk of angiosarcoma, a rare form of liver cancer, in humans.

Visibility-Reducing Particles. Visibility-reducing particles consist of suspended PM, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt. These particles in the atmosphere can obstruct the range of visibility. Their concentration regulation standard is intended to limit the frequency and severity of visibility impairment due to regional haze.

2.3.2 Air Quality Regulations (Criteria Pollutants)

Air quality is defined by ambient air concentrations of specific pollutants identified by the EPA to be of concern with respect to health and welfare of the general public. The EPA is responsible for enforcing the Federal Clean Air Act (CAA) of 1970 and its 1977 and 1990 Amendments. The CAA required the EPA to establish National Ambient Air Quality Standards (NAAQS), which identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. In response, the EPA established both primary and secondary standards for several pollutants (called "criteria" pollutants). Primary standards are

designed to protect human health with an adequate margin of safety. Secondary standards are designed to protect property and the public welfare from air pollutants in the atmosphere. Areas that do not meet the NAAQS for a particular pollutant are considered to be "nonattainment areas" for that pollutant.

The EPA established NAAQS for the protection of human health and the public welfare for six criteria pollutants: CO, SO_2, NO_2, O_3, PM_{10}, $PM_{2.5}$, and Pb. O_3 is not emitted directly, but is formed from a complex set of reactions involving O_3 precursors such as NO_x and volatile organic compounds (VOC) or ROG. Regulations relating to O_3, therefore, address emissions of NO_x, VOC and ROG.

Table 1, Ambient Air Quality Standards, presents a summary of the ambient air quality standards adopted by the federal CAA and California Clean Air Act.

Table 1
NATIONAL AND CALIFORNIA AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone (O_3)	1-Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	-	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.070 ppm (137 µg/m^3)		0.075 ppm (147 µg/m^3)		
Respirable Particulate Matter (PM_{10})	24-Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		-		
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	No Separate State Standard		35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	15 µg/m^3		
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	None	Non-Dispersive Infrared Photometry (NDIR)
	1-Hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)		
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		-	-	-
Nitrogen Dioxide (NO_2) (see footnote 8)	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	Gas Phase Chemiluminescence	53 ppb (100 µg/m^3)	Same as Primary Standard	Gas Phase Chemilumi-nescence
	1-Hour	0.18 ppm (339 µg/m^3)		100 ppb (188 µg/m^3)	None	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	-	Ultraviolet Fluorescence	0.030 ppm (see footnote 9)	-	Ultraviolet Fluorescence Spectro-photometry (Pararo-saniline Method)
	24-Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (see footnote 9)	-	
	3-Hour	-		-	0.5 ppm (1300 µg/m^3)	
	1-Hour	0.25 ppm (655 µg/m^3)		75 ppb (196 µg/m^3) (see footnote 9)	-	

Table 1 (cont.)
NATIONAL AND CALIFORNIA AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Lead[10,11]	30-Day Average	1.5 µg/m^3	Atomic Absorption	-	-	-
	Calendar Quarter	-		1.5 µg/m^3	Same as Primary Standard	High Volume Sampler and Atomic Absorption
	Rolling 3-Month Average	-		0.15 µg/m^3		
Visibility Reducing Particles[12]	8-Hour	Extinction coefficient of 0.23 kilometers – visibility of ten miles or more (0.7 – 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape		No Federal Standards		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide (H_2S)	1-Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[10]	24-Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

[1] California standards for O_3, CO (except Lake Tahoe), SO_2 (1- and 24-hour), NO_2, suspended particulate matter—PM_{10}, $PM_{2.5}$, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[2] National standards (other than O_3, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The O_3standard is attained when the fourth highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact EPA for further clarification and current federal policies.

[3] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25 degrees Celsius (°C) and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to parts per million (ppm) by volume, or micromoles of pollutant per mole of gas.

[4] Any equivalent procedure which can be shown to the satisfaction of the CARB to give equivalent results at or near the level of the air quality standard may be used.

[5] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

[6] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[7] Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.

[8] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national standards are in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standards of 53 ppb and 100 ppb are identical to 0.053 ppm and 0.100 ppm, respectively.

[9] On June 2, 2010, a new 1-hour SO2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.
Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

[10] The CARB has identified Pb and VC as TACs with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[11] The national standard for Pb was revised on October 15, 2008 to a rolling 3-month average. The 1978 Pb standard (1.5 µg/m3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

[12] In 1989, the CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

ppm = parts per million; µg/m^3 = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter

Source: CARB February 7, 2012

The federal CAA allows states to adopt ambient air quality standards and other regulations provided they are at least as stringent as federal standards. The CARB has established the more stringent California Ambient Air Quality Standards (CAAQS) for the six criteria pollutants through the California Clean Air Act of 1988, and also has established CAAQS for additional

pollutants, including sulfates, H_2S, VC, and visibility-reducing particles. Areas that do not meet the NAAQS or the CAAQS for a particular pollutant are considered to be "nonattainment areas" for that pollutant. As of April 30, 2012, the SDAB has been reclassified as a marginal nonattainment area for the 8-hour NAAQS for O_3. The attainment schedule in the California State Implementation Plan (SIP) called for the SDAB to attain the NAAQS for O_3 by June 15, 2009. However, because the marginal O_3 nonattainment reclassification will become effective on July 20, 2012, SDAPCD will have to prepare another revision to the Ozone Attainment Plan soon. The SDAB is an attainment area for the NAAQS for all other criteria pollutants. The SDAB is currently classified as a nonattainment area under the CAAQS for O_3, PM_{10}, and $PM_{2.5}$.

The CARB is the state regulatory agency with authority to enforce regulations to achieve and maintain the NAAQS and CAAQS. The CARB is responsible for the development, adoption and enforcement of the state's motor vehicle emissions program, as well as the adoption of the CAAQS. The CARB also reviews operations and programs of the local air districts, and requires each air district that is considered a nonattainment area to develop its own strategy for achieving the NAAQS and CAAQS. Each local air district has the primary responsibility for the development and implementation of rules and regulations that reflect the strategy to attain the NAAQS and CAAQS, as well as the permitting of new or modified sources, development of air quality management plans, and adoption and enforcement of air pollution regulations. In San Diego County, the attainment planning process is embodied in a regional air quality management plan developed jointly by the SDAPCD and the San Diego Association of Governments (SANDAG).

In San Diego, the SDAPCD is responsible for attainment planning required by the California Clean Air Act. The SDAPCD develops the Regional Air Quality Strategy (RAQS) to address strategies within the SDAB to attain and maintain air quality standards. The RAQS was initially adopted by the SDAPCD on June 30, 1992, and amended on March 2, 1993, in response to CARB comments. SDAPCD further updated the RAQS Revisions on December 12, 1995; June 17, 1998; August 8, 2001; July 28, 2004, and April 22, 2009. The local RAQS, in combination with those from all other California nonattainment areas with serious (or worse) air quality problems, is submitted to the CARB, which develops the SIP.

2.3.3 Existing Criteria Pollutant Levels

The SDAPCD operates a network of ambient air monitoring stations throughout San Diego County. The purpose of the monitoring stations is to measure ambient concentrations of the pollutants and determine whether the ambient air quality meets the CAAQS and the NAAQS. The nearest ambient monitoring stations to the Proposed Project site are the Camp Pendleton station, which is located approximately four miles north of the Project site (O_3 and NO_2 only), and the Escondido station, which is located approximately seven miles to the east of the Project site (CO, PM_{10}, and $PM_{2.5}$). Because of its coastal location similar to the Project site, the Camp Pendleton monitoring station O_3 levels are considered most representative of the site. Also, the Escondido monitoring station concentrations for all other pollutants except SO_2 are considered most representative of the Project site. The downtown San Diego monitoring station is the nearest location to the Project site where SO_2 concentrations are monitored. Ambient

concentrations of pollutants from these stations over the last three years are presented in Table 2, *Ambient Background Concentrations.*

The 8-hour federal O_3 standard was not exceeded in 2007 and 2011; however, it was exceeded 2 times in 2008, and 1 time each in 2009 and 2010. The 24-hour daily federal $PM_{2.5}$ standard was exceeded 13 times each in 2007, 2008, and 2009; 12 times in 2010; and 10 times in 2011. The other criteria pollutant data from the monitoring stations indicate that air quality is in attainment of all other federal standards. The Escondido monitoring station measured at least one exceedance of the annual federal PM_{10} standard during the period from 2006 to 2008; however, one exceedance per year is exempted under NAAQS. The Escondido monitoring station measured two exceedances of the daily California PM_{10} standard in 2007, during the period of the October 2007 wildfire season. The 8-hour California O_3 standard was exceeded 2 times in 2008, 1 time in 2009, and 1 time in 2010. Because of the location of the monitoring station in downtown Escondido, where traffic congestion is prevalent, the station has higher concentrations of CO than are measured elsewhere in San Diego County and the background data are not likely to be representative of background ambient CO concentrations in the Project vicinity. Use of downtown Escondido background data therefore provides a conservative estimate of background CO concentrations.

Table 2
AMBIENT BACKGROUND CONCENTRATIONS
SAN DIEGO MONITORING STATIONS

Air Pollutant	2007	2008	2009	2010	2011
Ozone – Camp Pendleton					
Max 1 Hour (ppm)	0.083	0.104	0.090	0.092	0.085
Days > CAAQS (0.09 ppm)	0	1	0	1	0
Max 8 Hour (ppm)	0.074	0.077	0.077	0.079	0.071
Days > NAAQS (0.075 ppm)	0	2	1	1	0
Days > CAAQS (0.070 ppm)	4	3	5	1	2
Nitrogen Dioxide (NO_2) – Camp Pendleton					
Max 1 Hour (ppm)	0.072	0.081	0.068	0.081	0.066
Days > CAAQS (0.18 ppm)	0	0	0	0	0
Annual Max (ppm)	0.016	0.018	0.010	0.008	0.007
Days > NAAQS (0.053 ppm)	0	0	0	0	0
Days > CAAQS (0.030 ppm)	0	0	0	0	0
Carbon Monoxide (CO) – Escondido					
Max 8 Hour (ppm)	3.2	2.8	3.05	2.78	2.56
Days > NAAQS (9 ppm)	0	0	0	0	0
Days > CAAQS (9.0 ppm)	0	0	0	0	0
Max 1 Hour (ppm)	5.2	5.6	4.4	3.9	3.5
Days > NAAQS (35 ppm)	0	0	0	0	0
Days > CAAQS (20 ppm)	0	0	0	0	0

Table 2 (cont.)
AMBIENT BACKGROUND CONCENTRATIONS
SAN DIEGO MONITORING STATIONS

Air Pollutant	2007	2008	2009	2010	2011
Particulate Matter (PM_{10}) – Escondido					
Max Daily ($\mu g/m^3$)	68.0	82.0	74.0	43.0	40.0
Days > NAAQS (150 $\mu g/m^3$)	0	0	0	0	0
Days > CAAQS (50 $\mu g/m^3$)	2	1	1	0	0
Annual Max ($\mu g/m^3$)	27	27	27	25	25
Days > NAAQS (20 $\mu g/m^3$)	1	1	1	1	1
Particulate Matter ($PM_{2.5}$) – Escondido					
Max Daily ($\mu g/m^3$)	126.2	44.0	64.9	48.4	67.7
Days > NAAQS (35 $\mu g/m^3$)	11	0	2	2	3
Annual Max ($\mu g/m^3$)	13	13	13	12	10
Days > NAAQS (15 $\mu g/m^3$)	0	0	0	0	0
Days > CAAQS (12 $\mu g/m^3$)	1	1	1	0	0
Sulfur Dioxide (SO_2) – Downtown San Diego					
Max Daily Measurement (ppm)	0.006	0.007	0.006	0.002	0.003
Days > NAAQS (0.14 ppm)	0	0	0	0	0
Days > NAAQS (0.04 ppm)	0	0	0	0	0

Abbreviations: > = exceed; ppm = parts per million; □g/m^3 = micrograms per cubic meter
CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard Mean = Annual Arithmetic Mean
* No Data / Insufficient Data
Source: CARB 2010 (all pollutants except 1-hour CO and annual maximum for PM_{10}, $PM_{2.5}$, and NO_2)
EPA 2010c (1-hour CO, and daily maximums for PM_{10}, $PM_{2.5}$, and NO_2)

2.4 TOXIC AIR CONTAMINANTS

2.4.1 TAC Background

In addition to the criteria air pollutants for which there are NAAQS and CAAQS, EPA and CARB also regulates a list of air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners) and stationary sources (e.g., factories or refineries).

Mobile Source Air Toxics (MSATs) are a subset of the 188 air toxics identified by the EPA. MSATs are emitted from vehicle and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as by-products. Metal air toxics result from engine wear or from impurities in oil or gasoline.

The EPA is the lead federal agency for administering the CAA and has certain responsibilities regarding the health effects of MSATs. The EPA issued a Final Rule on Controlling Emissions

of Hazardous Air Pollutants (HAPs) from Mobile Sources 66 FR 17229 (March 29, 2001). In the 2001 rulemaking, six of the 21 MSATs were identified by EPA as priority MSATs: acetaldehyde, benzene, formaldehyde, diesel exhaust, acrolein, and 1,3-butadiene (66 FR 17230).

In its rule, EPA also examined the impacts of existing and newly promulgated mobile source control programs, including its reformulated gasoline (RFG) program, its national low emission vehicle (NLEV) standards, its Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements, and its proposed heavy duty engine and vehicle standards and on-highway diesel fuel sulfur control requirements. Between 2000 and 2020, the Federal Highway Administration (FHWA) projects that even with a 64-percent increase in Vehicle Miles Traveled (VMT), these programs will reduce on-highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde by 57 to 65 percent, and will reduce on-highway diesel particulate matter (DPM emissions by 87 percent.

In 1998, California identified DPM as a TAC based on its potential to cause cancer and other adverse health impacts. In addition to diesel PM, emissions from diesel-fueled engines include over 40 other cancer-causing substances. In September 2000, the CARB approved a comprehensive Diesel Risk Reduction Plan (DRRP) to reduce diesel emissions from both new and existing diesel-fueled engines and vehicles. The goal of the DRRP is to reduce DPM emissions and the associated health risk by 75 percent in 2010 and 85 percent or more by 2020 (from the base year 2000 level).

2.4.2 TAC Regulations

California Diesel Regulations

The CARB is responsible for developing statewide programs and strategies to reduce the emission of smog-forming pollutants and toxics by diesel-fueled mobile sources. The identification of DPM as a TAC in 1998 led the CARB to adopt the DRRP in 2000 (CARB 2000). Included here are some of the resultant regulations that may be pertinent to this Project.

California Diesel Fuel Regulations

This rule sets sulfur limitations for diesel fuel sold in California for use in on-road and off-road motor vehicles (CARB 2005). Under this rule, diesel fuel used in motor vehicles had been limited to 500 ppm sulfur since 1993. The sulfur limit was reduced to 15 ppm beginning in September 1, 2006. (A federal diesel rule similarly limits sulfur content nationwide for on-road vehicles to 15 ppm, which began on October 15, 2006.)

California In-Use Off-Road Diesel Vehicle Regulation

On July 26, 2007, the CARB adopted a regulation to reduce DPM and NO_X emissions from in-use (existing) off-road heavy-duty diesel vehicles in California (CARB 2007). Any person, business, or government agency that owns or operates diesel-powered off-road vehicles in California (except for agricultural or personal use, or for use at ports or intermodal railyards)

with engines with maximum power of 25 horsepower or greater are subject to the regulation. The regulation applies to vehicles commonly used in construction, mining, rental, airport ground support, and other industries. Out-of-state companies doing business in California are also subject to the regulation.

California On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation

In 2008, the CARB approved a regulation (CARB 200b) to reduce emissions from existing trucks and buses operating in California significantly. Affected vehicles include on-road, heavy-duty, diesel-fueled vehicles with a gross vehicle weight rating (GVWR) greater than 14,000 pounds; yard trucks with off-road certified engines; and diesel-fueled shuttle vehicles of any GVWR. Out-of-state trucks and buses that operate in California are also subject to the regulation. Approximately 170,000 businesses in nearly all industry sectors in California, and almost a million vehicles that operate on California roads each year, are affected. Some common industry sectors that operate vehicles subject to the regulation include for-hire transportation; construction, manufacturing, retail, and wholesale trade; vehicle leasing and rental; bus lines; and agriculture.

Naturally Occurring Asbestos (NOA)

In July 2002, the CARB approved an Air Toxic Control Measure for construction, grading, quarrying and surface mining operations to minimize naturally occurring asbestos emissions (CARB 2007c). The regulation requires application of best management practices to control fugitive dust in areas known to have NOA, and it requires notification to the local air district prior to commencement of ground-disturbing activities.

National Emission Standard for Hazardous Air Pollutants (NESHAP) 40 CFR 61

The NESHAP is an asbestos standard that protects the general public from asbestos exposure due to demolition or demolition activities. The NESHAP requires surveys for suspect materials, notification of intent to renovate or demolish or remove regulated asbestos-containing materials (ACMs) before demolition or demolition activities, and proper management of asbestos-containing waste.

Asbestos Standard for the Construction Industry

The Federal Occupational Safety and Health Administration (OSHA) regulates asbestos as a worker health and safety issue through the Asbestos Standards for the Construction Industry (ASCI). EPA regulations concerning the identification, handling, management, and abatement of ACMs is found in the Asbestos Hazard Emergency Response Act (AHERA) and the NESHAP.

The ASCI (29 CFR 1926.1101; 8 California Code of Regulations 1529), administered by OHSA and Cal-OSHA, regulates asbestos exposure in the workplace for abatement workers and contractors. The ASCI:

- Specifies how workers and the public are to be protected during removal;
- Provides medical surveillance requirements for workers;

- Provided detailed requirements for how asbestos is to be removed; and,
- Defines training requirements for abatement personnel.

Building materials containing at least 1 percent asbestos are considered ACMs and should be managed according to OSHA requirements.

2.4.3 Existing TAC Levels

Ambient levels of selected TACs are measured by the CARB at several locations in southern California. The closest TAC monitoring stations to Carlsbad are in El Cajon and Chula Vista, approximately 30 miles and 45 miles south of the Proposed Project site, respectively. Both of these stations may potentially contain higher, as well as different, TAC concentrations than those near the Proposed Project because of the distance from the Project site and the myriad of land uses in those areas. Because DPM is not collected at the two monitoring stations, background concentrations for this TAC were obtained from the 2009 California Almanac of Emissions and Air Quality (CARB 2009). The annual average concentration for DPM in the SDAB is 1.4 micrograms per cubic meters ($\mu g/m^3$) with an estimated cancer risk of 420 chances in one million.

For perspective, one out of three Americans will eventually develop cancer, and one out of four will die from cancer. Therefore, the national average background cancer incidence is equivalent to 333,000 chances in one million.

2.5 GREENHOUSE GASES

2.5.1 Greenhouse Gas Background

Global climate change refers to changes in average climatic conditions on Earth, as a whole, including temperature, wind patterns, precipitation and storms. Global temperatures are moderated by naturally occurring atmospheric gases. Naturally occurring GHGs include water vapor, CO_2, CH_4 and N_2O. These gases allow solar radiation (sunlight) into the Earth's atmosphere, but prevent radiative heat from escaping, thus warming the Earth's atmosphere. The natural accumulation of GHGs in the atmosphere has a positive effect on the Earth's temperature. Without these natural GHGs, the Earth's temperature would be about 61ºF cooler (CalEPA 2006).

In addition to the naturally occurring gases, man-made compounds also act as GHGs; common examples include hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF_6). These compounds are the result of a number of activities including vehicular use, energy consumption/production, manufacturing, and cattle farming. These man-made compounds increase the natural concentration of GHGs in the atmosphere are and are commonly believed to result in a phenomenon referred to as "global warming" or "global climate change."

2.5.2 Greenhouse Gas Regulations

Concern about the disproportionately negative impacts that global warming are expected to have on the California environment and economy has led the California State Legislature to pass

several climate-change-related bills. These bills are aimed at controlling and reducing the emission of GHGs to slow the effects of global warming. The bills that have the potential to substantially impact the Proposed Project are discussed in this section. In addition to the bills discussed below, the California Legislature has introduced numerous other bills that range in scope from establishing market-based compliance mechanisms to energy standards for light bulbs. Some have been enacted into law and others are pending.

California Code of Regulations, Title 24, Part 6

Although not originally intended to reduce GHGs, California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24) were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The GHG emission inventory was based on Title 24 standards as of October 2005; however, Title 24 has been updated as of 2008 and standards were phased in as of January 2010. The latest Title 24 standards are anticipated to increase energy efficiency by 15 percent, thereby reducing GHG emissions from energy use by 15 percent. Energy-efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for water heating) results in GHG emissions. Therefore, increased energy efficiency results in decreased GHG emissions.

Executive Order D-16-00

This Executive Order (EO), signed by Governor Gray Davis on August 2, 2000, established a state sustainable building goal. The sustainable building goal is to site, design, deconstruct, construct, renovate, operate, and maintain state buildings that are models of energy, water, and materials efficiency, while providing healthy, productive, and comfortable indoor environments and long-term benefits to Californians. As with the California Energy Code, reductions in energy usage provided by sustainable building design would result in reduced GHG emissions.

Senate Bill 1771

Senate Bill (SB) 1771 (Sher), enacted on September 30, 2000, requires the Secretary of the Resources Agency to establish a nonprofit public benefit corporation, to be known as the "California Climate Action Registry" (CCAR), for the purpose of administering a voluntary GHG emission registry. The State Energy Resources Conservation and Development Commission (commonly called the California Energy Commission [CEC]) is required to develop metrics for use by the CCAR and update the state's inventory of GHG emissions by January 1, 2002, and every five years thereafter.

Executive Order S-7-04

EO S-7-04, signed by Governor Arnold Schwarzenegger on April 20, 2004, designated California's 21 interstate freeways as the "California Hydrogen Highway Network" and directed CalEPA and all other relevant state agencies to:

> …plan and build a network of hydrogen fueling stations along these roadways and in urban centers that they connect, so that by 2010, every Californian will have access to hydrogen fuel, with a significant and increasing percentage from clean, renewable sources.

The EO also directs the CalEPA, in concert with State Legislature, and in consultation with the CEC and other relevant state and local agencies to develop the California Hydrogen Economy Blueprint Plan "for the rapid transition to a hydrogen economy in California" by January 1, 2005. The blueprint plan is to be updated biannually. Recommendations to the Governor and State Legislature are to include, among others:

> Promoting environmental benefits (including global climate change) and economic development opportunities resulting from increased utilization of hydrogen for stationary and mobile applications; policy strategies to ensure hydrogen generation results in the lowest possible emissions of GHG and other air pollutants.

Executive Order S-3-05

EO S-3-05, signed by Governor Schwarzenegger on June 1, 2005, calls for a reduction in GHG emissions to year 1990 levels by the year 2020, and for an 80-percent reduction in GHG emissions by the year 2050. EO S-3-05 also calls for the CalEPA to prepare biennial science reports on the potential impact of continued global warming on certain sectors of the California economy. The first of these reports, "Scenarios of Climate Change in California: An Overview," was published in February 2006. The report uses a range of emissions scenarios developed by the United Nations Intergovernmental Panel on Climate Change (IPCC) to project a series of potential warming ranges (i.e., temperature increases) that may occur in California during the 21st century: lower warming range (3.0 - 5.5°F); medium warming range (5.5 - 8.0°F); and higher warming range (8.0 - 10.5°F). The report then presents analysis of future climate in California under each warming range.

As shown above, each emissions scenario would result in substantial temperature increases for California. According to the report, substantial temperature increases would result in a variety of impacts to the people, economy, and environment of California associated with a projected increase in extreme conditions. The severity of the impacts would depend upon actual future emissions of GHGs and associated warming. Under the report's emissions scenarios, the impacts of global warming in California are anticipated to include, but are not limited to, public health, biology, rising sea levels, hydrology and water quality, and water supply.

Assembly Bill 32 – Global Warming Solution Act of 2006

The California Global Warming Solutions Act of 2006, widely known as AB 32, requires the CARB to develop and enforce regulations for the reporting and verification of statewide GHG emissions. CARB is directed to set a GHG emission limit, based on 1990 levels, to be achieved by 2020. The bill sets a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner.

The heart of the bill is the requirement that statewide GHG emissions must be reduced to 1990 levels by the year 2020. California needs to reduce GHG emissions by approximately 28.3 percent below the business-as-usual (BAU) predictions to achieve this goal. The bill requires the CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions. Key AB 32 milestones are as follows:

- June 30, 2007 – Identification of discrete early action GHG emissions reduction measures. On June 21, 2007, CARB satisfied this requirement by approving three early action measures. These were later supplemented by adding six other discrete early action measures.

- January 1, 2008 – Identification of the 1990 baseline GHG emissions level and approval of a statewide limit equivalent to that level. Adoption of reporting and verification requirements concerning GHG emissions. On December 6, 2007, the CARB approved a statewide limit on GHG emissions levels for the year 2020 consistent with the determined 1990 baseline.

- January 1, 2009 – Adoption of a Scoping Plan for achieving GHG emission reductions. On October 15, 2008, the CARB issued a "discussion draft" Scoping Plan entitled "Climate Change Draft Scoping Plan: A Framework for Change" (Draft Scoping Plan). The CARB adopted the Draft Scoping Plan at its December 11, 2008 meeting.

- January 1, 2010 – Adoption and enforcement of regulations to implement the discrete early action measures. On April 2009, CARB adopted low carbon fuel standards. On September 2009, CPUC adopted energy efficiency programs and CARB adopted the clean vehicle standards. On November 2009, CEC adopted the television energy efficiency standards.

- January 1, 2011 – Adoption of GHG emissions limits and reduction measures by regulation. On September 2010, CARB established regional GHG targets under Senate Bill (SB) 375.

- January 1, 2012 – GHG emissions limits and reduction measures adopted in 2011 become enforceable. On March 2011, California Legislature passed the 33-percent renewable portfolio standards for both public and investor-owned utilities. On October 2011, CARB adopted the final cap and trade regulation.

As of October 31, 2011, 18 of 30 CARB regulations had been approved, including all nine discrete early actions, as required by AB 32. The current estimate for the necessary GHG emissions reductions to attain the goals of AB 32 (i.e., 1990 levels by 2020) is 174 million metric tons (MMT) of CO_2 equivalent[1] (CO_2e). It is estimated that the nine proposed discrete early actions will provide approximately 16 MMT CO_2e of GHG reductions while the other early actions will provide approximately 26 MMT CO_2e of GHG reductions. It also is anticipated that an additional 30 MMT CO_2e in reductions will be achieved from the passage of anti-idling measures and AB 1493 (described below). The remaining 102 MMT CO_2e are expected to be achieved through CARB's Scoping Plan and other emission reduction efforts by members of the Climate Action Team (CAT). By January 1, 2014, and every five years thereafter, the CARB will update its Scoping Plan.

Assembly Bill 1493 – Vehicular Emissions of Greenhouse Gases

In response to the transportation sector accounting for more than half of California's CO_2 emissions, AB 1493 (Pavley) was enacted on July 22, 2002. AB 1493 requires the CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined to be vehicles whose primary use is noncommercial personal transportation in the state manufactured in year 2009 or later. In setting these standards, the CARB considered cost effectiveness, technological feasibility, and economic impacts. The CARB adopted the standards in September 2004. When fully phased in, the near-term (years 2009 to 2012) standards would result in a reduction of approximately 22 percent in GHG emissions compared to the emissions from the year 2002 fleet, while the midterm (years 2013 to 2016) standards would result in a reduction of approximately 30 percent. Some currently used technologies that achieve GHG reductions include small engines with superchargers, continuously variable transmissions and hybrid electric drives. To set its own GHG emissions limits on motor vehicles, California had to receive a waiver from the EPA. The EPA approved the waiver in June 2009.

Assembly Bill 75

AB 75 was passed in 1999 and mandates state agencies to develop and implement an integrated waste management plan to reduce GHG emissions related to solid waste disposal. In addition, the bill mandates that community service districts providing solid waste services report the disposal and diversion information to the appropriate city, county or regional jurisdiction. Since 2004, the bill requires diversion of at least 50 percent of the solid waste from landfills and transformation facilities, and submission to the California Department of Resources Recycling and Recovery (formerly known as California Integrated Waste Management Board) of an annual report describing the diversion rates.

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[1] The effect each GHG has on climate change is measured as a combination of the volume of its emissions, and its global warming potential. The global warming potential is the potential of a gas or aerosol to trap heat in the atmosphere, and is expressed as a function of how much warming would be caused by the same mass of CO_2. For instance, CH_4 has a global warming potential of 21, meaning that one gram of CH_4 traps the same amount of heat as 21 grams of CO_2.

Senate Bill 1368

In 2006, the California Legislature passed SB 1368, which requires the Public Utilities Commission (PUC) to develop and adopt a "GHGs emission performance standard" by February 1, 2007, for the private electric utilities under its regulation. The PUC adopted an interim standard on January 25, 2007, but has formally requested a delay for the local publicly owned electric utilities under its regulation. These standards apply to all long-term financial commitments entered into by electric utilities. The CEC was required to adopt a consistent standard by June 30, 2007. However, this date was missed, and the CEC will address the concerns of the Office of Administrative Law (OAL) and resubmit the rulemaking. The rulemaking then must be approved by the OAL before it can take effect. As of this writing, CEC has postponed this required rulemaking process indefinitely.

In the meantime, the PUC and CEC adopted a preferred loading order to meet goals for satisfying the state's growing demand for electricity while reducing GHG emissions. The preferred loading order places top priority on first increasing energy efficiency and demand response, then providing new generation from renewable and distributed generation resources, and, lastly, providing clean fossil-fueled generation and infrastructure improvements.

Senate Bill 1505

Largely in response to EO S-7-04, SB 1505 was passed by the legislature and signed by Governor Schwarzenegger on September 30, 2006. This bill requires the CARB to adopt regulations by July 1, 2008 that ensure that the production and use of hydrogen for transportation purposes contributes to the reduction of GHG emissions, criteria air pollutants and TACs.

Executive Order S-01-07

This EO, signed by Governor Schwarzenegger on January 18, 2007, directs that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by the year 2020. It orders that a Low Carbon Fuel Standard (LCFS) for transportation fuels be established for California and directs the CARB to determine whether a LCFS can be adopted as a discrete early action measure pursuant to AB 32. The CARB approved the LCFS as a discrete early action item with a regulation adopted and implemented in April 2010.

On December 29, 2011, District Judge Lawrence O'Neill in the Eastern District of California issued a preliminary injunction blocking CARB from implementing LCFS. The court found that LCFS impermissibly discriminates against out-of-state corn ethanol and impermissibly regulates beyond California in violation of the dormant Commerce Clause doctrine. As a result of this injunction, LCFS were not incorporated into the analysis provided in this report.

Senate Bill 97 – CEQA: Greenhouse Gas Emissions

In August 2007, Governor Schwarzenegger signed into law SB 97 – CEQA: Greenhouse Gas Emissions, stating: "This bill advances a coordinated policy for reducing GHG emissions by

directing the Office of Planning and Research (OPR) and the Resources Agency to develop California Environmental Quality Act (CEQA) guidelines on how state and local agencies should analyze and, when necessary, mitigate GHG emissions." Specifically, SB 97 requires the OPR to prepare, develop, and transmit to the California Natural Resources Agency (CNRA) guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, including but not limited to, effects associated with transportation or energy consumption. The CNRA certified and adopted the guidelines amendments on December 30, 2009, and transmitted the Adopted Amendments and the entire rulemaking file to the OAL on December 31, 2009. The amendments were approved by the OAL on February 16, 2010, and became effective on March 18, 2010. The new State CEQA guidelines provide the lead agency with broad discretion in determining what methodology is used in assessing the impacts of GHG emissions in the context of a particular project.

With respect to the significance assessment, newly added State CEQA Guidelines Section 15064.4, subdivision (b), indicates:

> A lead agency should consider the following factors, among others, when assessing the significance of impacts from GHG emissions on the environment:
>
> (1) The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting;
> (2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project;
> (3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

The amendments also provide that lead agencies should consider all feasible means of mitigating GHG emissions that substantially reduce energy consumption. These potential mitigation measures may include carbon sequestration. If off-site or carbon-offset mitigation measures are proposed, they must be part of reasonable plan of mitigation that the agency itself is committed to implementing. No threshold of significance or any specific mitigation measures are indicated.

Among other things, CNRA noted in its Public Notice for these changes that impacts of GHG emissions should be considered in the context of a cumulative impact, rather than a project impact. The Public Notice states:

> "While the Proposed Amendments do not foreclose the possibility that a single project may result in greenhouse gas emissions with a direct impact on the environment, the evidence before [CNRA] indicates that in most cases, the impact will be cumulative. Therefore, the Proposed Amendments emphasize that the analysis of greenhouse gas emissions should center on whether a project's incremental contribution of greenhouse gas emissions is cumulatively considerable."

Senate Bill 375

SB 375 was signed and passed into law on September 30, 2008. SB 375 enhances the CARB's ability to reach AB 32 goals. Specifically, SB 375 requires the CARB to set regional targets for the purpose of reducing GHG emissions from passenger vehicles for the years 2020 and 2035. If regions develop integrated land use, housing and transportation plans that meet the SB 375 targets, new projects in these regions can be relieved of certain review requirements of CEQA. The targets apply to the regions in the state covered by 18 metropolitan planning organizations (MPOs).

Per SB 375, the CARB appointed a Regional Targets Advisory Committee (RTAC) on January 23, 2009, to provide recommendations on factors to be considered and methodologies to be used in the CARB's target-setting process. The RTAC provided its recommendations in a report to the CARB on September 29, 2009. The CARB released its draft targets on June 30, 2010, and adopted their final targets on September 23, 2010.

SANDAG developed its first Regional Transportation Plan (RTP) subject to the provisions of SB 375, which requires that MPOs prepare a Sustainable Communities Strategy (SCS) as part of the RTP. The SCS must demonstrate how development patterns and the transportation network, policies, and programs can work together to achieve the GHG emission reduction targets for cars and light trucks that will be established by the CARB, if there is a feasible way to do so. The SANDAG Board of Directors released the Draft 2050 RTP and its SCS for public review and comment at its April 22, 2011, meeting. The release of the Draft 2050 RTP began the public comment period which extended through June 30, 2011. The Draft 2050 RTP and its SCS were developed following more than two years of planning, technical development, outreach, and public input. The 2050 RTP was approved by the SANDAG Board of Directors on October 28, 2011.

California Energy Commission: New Solar Homes Partnership

The New Solar Homes Partnership is a component of the California Solar Initiative and has a goal to produce 400 megawatts of solar electricity on approximately 160,000 homes by year 2017. To qualify for the program, a new home must achieve energy-efficiency levels greater than the requirements of the year 2005 Building Title 24 Standards. The builder can choose to comply with either of two tiers of energy-efficiency measures: Tier I requires a 15-percent reduction from Title 24 Standards; or Tier II, which requires a 35-percent reduction overall and 40-percent reduction in the building's space cooling (air conditioning) energy compared to Title 24 (CEC 2008). In addition, all appliances must have an Energy Star rating, which indicates that the appliance is consistent with the international standard for energy-efficient consumer products.

California Air Resources Board: Interim Significance Thresholds

In October 2008, the CARB released interim guidance on significance thresholds for industrial, commercial, and residential projects (CARB 2008c). The draft proposal for residential and commercial projects states that a project would not be significant if it complies with a previously approved plan that addresses GHG emissions, or meets an energy use performance standard defined as CEC's Tier II Energy Efficiency goal (specified as 35 percent above Title 24 requirements) along with "as yet to be defined" performance standards for water, waste, and

transportation or is below an "as yet to be developed" threshold for GHG emissions tons per year. As such, the CARB did not establish a threshold of significance. As of January 22, 2009, the CARB has halted all work efforts on the draft *GHG Threshold of Significance under CEQA*.

California Air Resources Board: Scoping Plan

On December 11, 2008, the CARB adopted the Scoping Plan (CARB 2008c) as directed by AB 32. The Scoping Plan proposes a set of actions designed to reduce overall GHG emissions in California to the levels required by AB 32. The measures in the Scoping Plan approved by the CARB are now in place, with further implementation details and regulations to be developed. Measures applicable to development projects include the following:

- Maximum energy-efficiency building and appliance standards, including more stringent building codes and appliance efficiency standards, and solar water heating;
- Use of renewable sources for electricity generation, such as photovoltaic solar associated with the Million Solar Roofs program;
- Regional transportation targets, including integration of development patterns and the transportation network to reduce vehicle travel, as identified in SB 375; and
- Green Building strategy, including siting near transit or mixed use areas, zero-net-energy buildings, "beyond-code" building efficiency requirements and the use of the CEC's Tier II Energy Efficiency goal.

Relative to transportation, the Scoping Plan includes nine measures or recommended actions. One of these is measure T-3, Regional Transportation-related Greenhouse Gas Targets, which relies on SB 375 implementation to reduce GHG emissions from passenger vehicles through reducing VMT. The other measures are related to vehicle GHGs, fuel, and efficiency measures, and would be implemented statewide rather than on a project-by-project basis.

2010 California Green Building Standards Code

The 2010 California Green Building Standards Code, referred to as CALGreen, went into effect in January 2011. CALGreen is the first-in-the-nation statewide mandatory green building code. California now requires new buildings to reduce its water consumption, employ building commissioning to increase building system efficiencies, divert construction waste from landfills, and to install low pollutant-emitting finish materials. CALGreen has approximately 52 mandatory measures and additional measures designed to allow local cities to adopt codes that go beyond the state mandatory provisions. Some key mandatory measures for commercial buildings include specified parking for clean air vehicles, a 20-percent reduction of potable water use within buildings, a 50-percent construction waste diversion from landfills, use of building finish materials that emit low volatile organic compounds, and building commissioning. Other key components include increased reduction in energy usage by 15 percent and increased reduction in potable water use. The CALGreen code includes the critical issue of compliance verification by utilizing the existing building code enforcement infrastructure, and allows local public agencies to incorporate the CALGreen code provisions into their construction field inspections. The mandatory CALGreen measures will be inspected and verified by local building departments.

2.5.3 Existing Greenhouse Gas Levels

The IPCC constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. The IPCC concluded that a stabilization of GHGs at 400 to 450 ppm CO_2e concentration is required to keep global mean warming below 3.6ºF (2º Celsius), which is assumed to be necessary to avoid dangerous climate change (Association of Environmental Professionals 2007).

GHGs have varying global warming potential (GWP). The GWP is the potential of a gas or aerosol to trap heat in the atmosphere, and is defined as the "cumulative radiative forcing effect of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to a reference gas" (EPA 2006). The reference gas for GWP is CO_2; therefore, CO_2 has a GWP of 1. The other main GHGs that have been attributed to human activity include CH_4, which has a GWP of 21, and N_2O, which has a GWP of 310.

Anthropogenic sources of CO_2 include combustion of fossil fuels (coal, oil, natural gas, gasoline and wood). Data from ice cores indicates that CO_2 concentrations remained steady prior to the current period for approximately 10,000 years. Concentrations of CO_2 have increased in the atmosphere since the industrial revolution (i.e., from approximately the year 1750 onward) from approximately 280 ppm to approximately 388 ppm in 2009, an increase of 108 ppm. Data from Mauna Loa Observatory on Hawaii indicate that CO_2 concentrations in the atmosphere have increased from 315 ppm in 1960 to the present levels (Earth Systems Research Laboratory [ESRL] 2010).

Methane is the main component of natural gas and also arises naturally from anaerobic decay of organic matter. Anthropogenic sources of natural gas include landfills, fermentation of manure and cattle farming. Anthropogenic sources of N_2O include combustion of fossil fuels and industrial processes such as nylon production and production of nitric acid.

In 2004, total GHG emissions worldwide were estimated at 20,135 MMT of CO_2 equivalent emissions (United Nations Framework Convention on Climate Change 2006). The United States contributed the largest portion of GHG emissions at 35 percent of global emissions. In California, according to the CEC (2006), CO_2 accounts for approximately 84 percent of statewide GHG emissions, with CH_4 accounting for approximately 5.7 percent of GHG emissions, and N_2O accounting for 6.8 percent of GHG emissions. Other pollutants account for approximately 2.9 percent of GHG emissions in California. The transportation sector is the single largest category of California's GHG emissions, accounting for 41 percent of emissions statewide. CARB estimates that the 1990 statewide CO_2e emissions level was 427 MMT (CARB 2007a). In 2004, California produced 492 MMT of total CO_2e emissions.

In addition to California GHG Inventory, a regional GHG inventory was prepared by the University of San Diego School of Law Energy Policy Initiative Center (EPIC) in 2008. This San Diego County GHG Inventory is a detailed inventory that takes into account the unique characteristics of the region in calculating emissions. A total of 34.4 MMT CO_2e was generated by the County of San Diego. This total includes both the incorporated and unincorporated areas. Not surprisingly, the largest contributor of GHG was from the on-road transportation category,

which comprised 46 percent (16 MMT CO_2e) of the total amount. The second highest contributor was the electricity category, which contributed 9 MMT CO_2e, or 25 percent of the total. Together the on-road transportation and electricity category comprised 71 percent of the total GHG emissions for the County. The remaining amount was contributed by natural gas consumption, civil aviation, industrial processes, off-road transportation, waste, agriculture, rail, water-borne navigation, and other fuels. By 2020, under a BAU scenario, regional GHG emissions in San Diego County are expected to be 43 MMT CO_2e, an increase of 14 MMT CO_2e (48 percent) over 1990 levels. BAU is defined as the emissions that would occur in the absence of reductions mandated under AB 32.

Current sources of GHG emissions at the existing Westfield Carlsbad shopping center include combustion of fossil fuels, including emissions from energy use, water consumption, and motor vehicles. Living vegetation at the regional shopping center stores carbon; thus, carbon sinks would include vegetation used in landscaping at the site.

3.0 THRESHOLDS OF SIGNIFICANCE

3.1 CRITERIA POLLUTANTS

A potentially significant impact to air quality would occur if the project caused one or more of the following:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including release emissions which exceed quantitative thresholds for O_3 precursors);
- Expose sensitive receptors (i.e., day care centers, schools, retirement homes, and hospitals or medical patients in residential homes which could be impacted by air pollutants) to substantial pollutant concentrations, including air toxins such as diesel particulates; or
- Create objectionable odors affecting a substantial number of people

The City's emission-specific thresholds were derived from the SDAPCD's Regulation II, Rule 20.2, Table 20.2, Air Quality Impact Analysis (AQIA) Trigger Levels (SDAPCD 1998). These thresholds are applicable as a screening criterion for potential significance. The threshold for ROG is based on significance criteria from the City of San Diego (2007). The threshold for $PM_{2.5}$ is based on significance criteria from the South Coast Air Quality Management District (SCAQMD 2009). The emission thresholds are shown in Table 3.

Table 3 AIR QUALITY SIGNIFICANCE THRESHOLDS			
Pollutant	**Pounds/hour**	**Pounds/day**	**Tons/year**
Carbon Monoxide (CO)	100	550	100
Oxides of Nitrogen (NO_x)	25	250	40
Particulate Matter (PM_{10})	-	100	15
Oxides of Sulfur (SO_x)	25	250	40
Lead (Pb) and Lead Compounds	-	3.2	0.6
Reactive Organic Gases (ROG)	-	137	15
Fine Particulate Matter ($PM_{2.5}$)	-	55	10

Sources: SDAPCD 1998.
City of San Diego 2007.
SCAQMD 2009.

In the event that emissions exceed these thresholds, modeling is required to determine whether the Project's total air quality impacts would result in ground-level concentrations that are above the National and California Ambient Air Quality Standards (shown in Table 1), including appropriate background levels (shown in Table 2).

3.2 TOXIC AIR CONTAMINANT (TAC) EMISSIONS

In addition to impacts from criteria pollutants, project impacts may include emissions of pollutants identified by the state and federal government as TACs or HAPs. In San Diego County, SDAPCD Regulation XII establishes acceptable risk levels and emission control requirements for new and modified facilities that may emit additional TACs. Under Rule 1210, emissions of TACs that result in a cancer risk of more than ten in one million, or a health HI of more than one, are considered a significant impact.

With regard to evaluating whether a project would have a significant impact on sensitive receptors, air quality regulators typically define sensitive receptors as schools (preschool through 12th grade), hospitals, resident care facilities, day-care centers, or other facilities that may house individuals with health conditions that would be adversely impacted by changes in air quality. Any project which has the potential to directly impact a sensitive receptor located within one mile and results in a health risk greater than ten in one million would have a potentially significant impact.

All demolition materials found to contain hazardous materials will be abated, per state and federal law, and taken to an appropriate hazardous material disposal site. Hazardous and contaminated demolition materials located at the Project site include, but are not limited to, ACMs and lead based paint (LBP) attached to, affixed to, or imbedded in building materials, concrete, or other building components, as well as CFCs in any refrigeration and air conditioning units remaining on site. Emissions of asbestos for the Proposed Project would be less than significant due to the removal of all regulated ACM that is required by SDAPCD Rule 361.145 prior to demolition of each building. Regulated ACM include materials containing more than

one-percent asbestos that are either friable (can be crumbled, pulverized, or reduced to powder by hand pressure), or non-friable, but likely to become friable (airborne) through the use of tools, work practices, or the forces expected to act on the materials in the course of demolition.

Emissions of Pb from paint would also be less than significant, as all contaminated material would be removed intact whenever possible and disposed of at an appropriate hazardous material disposal site, and a LBP abatement plan would be prepared and implemented.

DPM is a TAC and carcinogen that would be emitted in the exhaust from demolition equipment and haul trucks. Due to the relatively short duration of the Proposed Project construction activities, significant long-term public health effects are not expected to occur as a result of Proposed Project emissions. The health risk assessment conducted for carcinogens is typically for a period of 70 years; however, due to the short duration of the Proposed Project, it is not meaningful to estimate quantitative carcinogenic health risks in this case. In addition, no regulatory thresholds for adverse health risk effects due to acute (short-term) exposure to DPM have been established.

3.3 OBJECTIONABLE ODORS

SDAPCD Rule 51 (Public Nuisance) prohibits emission of any material which causes nuisance to a considerable number of persons or endangers the comfort, health or safety of any person. A project that proposes a use which would produce objectionable odors would be deemed to have a significant odor impact if it would affect a considerable number of off-site receptors.

3.4 GREENHOUSE GASES

To date, there have been no local, regional, state, or federal regulations establishing a threshold of significance to determine project-specific impacts of GHG emissions. The State CEQA Guidelines allow lead agencies to develop a significance threshold. However, the City has not established such threshold. Therefore, the City is utilizing the following as its CEQA threshold of significance. Based on Appendix G of the State Guidelines, the Project would have a significant direct, indirect or cumulative impact to GHG if the Project would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

The Proposed Project would have a significant effect on GHG emissions if it is inconsistent with AB 32's goal of reducing GHG emissions to 1990 levels by 2020. As part of the *Supplemental to the Climate Change Scoping Plan*, CARB updated the projected 2020 "BAU" emissions inventory based on current economic forecasts (i.e., as influenced by the economic downturn) and reduction measures already in place. CARB staff derived the updated emissions estimates by projecting emissions from a past baseline estimate using three-year average emissions, by sector, for 2006-2008 and considering the influence of the recent recession and reduction measures that are in operation. Specific measures included are the million-solar-roofs

program, the AB 1493 (Pavley) motor vehicle GHG emission standards, and the LCFS. In addition, CARB has included in the 2020 "BAU" emissions inventory those GHG reduction actions with additional statutory authority and that are reasonably expected to occur in the foreseeable future, such as the 33-percent Renewable Energy Portfolio Standard (RPS) for electricity generation. Considering the updated "BAU" estimate of 507 MMT CO_2e by 2020, a reduction of 80 MMT CO_2e or 16-percent reduction below the estimated "BAU" levels would be necessary to return to 1990 levels (i.e., 427 MMT CO_2e) by 2020.

Based on this guidance from the State CEQA Guidelines, California Air Pollution Control Officers' Association (CAPCOA) and the City, the Proposed Project could result in a significant, cumulative climate change impact if it would not reduce its GHG emissions by at least 16 percent over that which would have been expected to occur in the BAU condition, because it would conflict with AB 32 adopted for purpose of reducing the emissions of GHG. Therefore, to reduce potential impacts to below a level of significance, the Proposed Project must achieve a 16-percent reduction from the year 2020 BAU level.

Analysis Limitations

As discussed earlier, global climate change could lead to various changes in weather and rainfall patterns over time which could impact California through loss in snow pack, sea level rise, more extreme heat days per year, more high O_3 days, more large forest fires, and more drought years (CARB 2007). Several recent studies have attempted to explore the possible negative consequences that climate change, left unchecked, could have in California. These reports acknowledge that climate scientists' understanding of the complex global climate system, and the interplay of the various internal and external factors that affect climate change, remains too limited to yield scientifically valid conclusions on such a localized scale. Substantial work has been done at the international and national level to evaluate climatic impacts, but far less information is available on regional and local impacts. In addition, projecting regional impacts of climate change and variability relies on large-scale scenarios of changing climate parameters, using information that is typically at too coarse a scale to make accurate regional assessments (Kiparsky 2003).

The difficulty of analyzing climate change on a regional or local level is illustrated by the following. Modeling of climate change consistently predicts increasing temperatures; however, the ways in which increasing temperatures will affect precipitation is not well understood. Studies have found that, "Considerable uncertainty about precise impacts of climate change on California hydrology and water resources will remain until we have more precise and consistent information about how precipitation patterns, timing, and intensity will change" (Kiparsky 2003).

Even assuming that climate change leads to long-term increases in precipitation, analysis of the impact of climate change is further complicated by the fact that no studies have identified or quantified the runoff impacts such an increase in precipitation would have in particular watersheds (Kiparsky 2003). Also, little is known about how groundwater recharge and water quality will be affected. Higher rainfall could lead to greater groundwater recharge, although reductions in spring runoff and higher evapotranspiration could reduce the amount of water available for recharge. The Department of Water Resources and the CEC have also noted the uncertain effect of climate change on water supply. In light of this dearth of accurate scientific

information, analyzing the potential impacts a project would have on the regional or local environment is inherently complicated and the conclusions that can be drawn are limited. Ultimately, determining whether the Proposed Project's contribution of GHGs is significant or not, requires a knowledge of incremental effects that is not currently available.

4.0 IMPACTS

This section evaluates potential impacts of the Proposed Project related to the generation of air pollutants, including CO, SO_2, NO_2, O_3, PM_{10}, $PM_{2.5}$, Pb, and GHGs including CO_2, CH_4, N_2O, HFCs, PFCs and SF_6.

4.1 CRITERIA POLLUTANTS

The Proposed Project could result in both construction and operational impacts. Construction impacts include short-term emissions associated with the construction of the Project. Operational impacts include long-term emissions associated with the traffic generated by the Project as well as water and energy consumption.

4.1.1 Construction Criteria Pollutant Impacts

Emissions from the construction phase of the Project were estimated through the use of the CalEEMod model version 2001.1 (SCAQMD 2011), a computer model developed for the CARB by estimating the types and number of pieces of equipment that would be used to demolish existing structures, grade the Project site, construct the proposed development, and plant new landscaping within the Project site. The CalEEMod Model contains the latest OFFROAD emission factors and EMFAC2007 emission factors from the CARB's models for off-road equipment and on-road vehicles.

The construction activities associated with the Proposed Project would create diesel emissions, and would generate emissions of dust. Construction equipment within the Project site that would generate criteria air pollutants could include backhoe, cranes, dozers, excavator, loaders, portable rock crusher, and haul trucks. Some of this equipment would be used during demolition and grading activities as well as when structures are constructed on the Project site. In addition, emissions during construction and grading activities include truck trips off site to remove debris during the demolition phase and construction truck trips. It is assumed that most of the construction equipment used would be diesel-powered.

Construction would require heavy equipment during demolition, grading/excavation, building construction, architectural coating, and paving. Table 4 presents a summary of the assumed equipment that would be involved in construction.

Table 4
CONSTRUCTION PHASES AND EQUIPMENT REQUIREMENTS

		Demolition		Grading		Building Construction		Architectural Coatings		Paving	
	Duration (month)	1		3-4		12-15		6-8		1-2	
List of Equipment	Horsepower	Pieces	Hours	Pieces	Hours	Pieces	Hours	Pieces	Hours	Pieces	Hours
Aerial Lift	34	4	8			10	8	3	8		
Air Compressors	78	2	8			2	8	1	8		
Cement and Mortar Mixers	9			1	8	2	8	1	8	1	8
Concrete/Industrial Saws	81	1	8								
Cranes	208	1	4			2	4				
Crawler Tractors	82	1	8	5	8					4	8
Crushing/Proc. Equipment	85	1	4								
Dumpers/Tenders	16	10	4	20	4					20	4
Excavators	157	2	8	3	8	1	4				
Forklifts	149	2	8			4	8	1	8		
Generator Sets	84	2	8			3	8				
Graders	162			2	8					1	8
Off-Highway Tractors	160			1	8	1	8			1	4
Off-Highway Trucks	381			2	8					1	4
Other Construction Equipment	327	2	4	2	4	2	4			2	4
Other General Industrial Equipment	150			1	4	4	4				
Pavers	89									2	8
Paving Equipment	82									4	8
Plate Compactors	8					2	8			2	8
Pressure Washers	13					2	8				
Pumps	84					1	8				
Rollers	84			2	8					3	8
Rough Terrain Forklifts	83	1	8			2	8	1	8		
Rubber Tired Dozers	358	1	4	2	4					2	4
Rubber Tired Loaders	87	1	8	2	8					2	8
Skid Steer Loaders	37	4	8	2	8	1	8			2	8
Sweepers/Scrubbers	88	1	4			1	4			1	4
Tractors/Loaders/Backhoes	75	2	8	2	8	2	8			2	8
Welders	46					8	8				

Source: Construction duration - Westfield 2010, List of Equipment – CalEEMod Default

[1] It was assumed that the building construction and paving phases would overlap in the last two months of construction.

For the purpose of this analysis, construction activities are assumed to occur in three separate phases, which would occur sequentially. Demolition and grading/excavation emissions were calculated as a separate phase. It is estimated that approximately 225,631 sf of the building structure would be demolished; and the Project would require approximately 8,000 cy of surface cuts; 12,000 cy of fill, 8,000 cy of remedial grading, and 4,000 cy of imported soil. Building construction, architectural coating (i.e., painting), and asphalt paving emissions were calculated as well.

Heavy equipment emissions, fugitive dust emissions, and other construction-related volatile emissions were estimated using the CalEEMod Model, Version 2011.1. Equipment emission rates are based on California state-wide emissions for the San Diego County region.

EMFAC2007 Version 2.3 was used in CalEEMod model to develop emission factors for the various criteria pollutants from construction equipment. EMFAC2007 does not account for rules and regulations enacted by the California Air Resources Board (CARB) after 2007. Two notable regulations not captured in EMFAC are those designed to reduce NO_x and diesel particulate matter (DPM). The 2010 Statewide Diesel Bus and Truck Regulation and Drayage Truck Regulation will require fleets to reduce DPM and NO_x emissions. The regulations now require the installation of particulate matter filters beginning January 1, 2012 and replacement of older engines beginning January 1, 2015. All trucks to be utilized at the proposed Westfield Carlsbad Project site are expected to meet the 2007 U.S. EPA standards for trucks.

For the off-road equipment (i.e., construction equipment), OFFROAD2007 was used to develop emission factors for the various criteria pollutants. OFFROAD2007 utilizes the U.S. EPA Tier 1 equipment emission factors and does not account for rules and regulations enacted by the CARB after 2007. To reduce emissions from non-road diesel equipment, EPA established a series of tier emission standards for new non-road diesel engines. Tier 1 standards were phased in between 1996 and 2000 (year of manufacture), depending on the engine horsepower category. Tier 2 standards were phased in between 2001 and 2006. Tier 3 standards were phased in between 2006 and 2008. Tier 4 standards, which often require add-on emission control equipment to reach attainment, are being phased in from 2008 to 2015. For this Proposed Project, the Tier 3 engine standards were applied to construction equipment in the CalEEMod model.

Table 5 presents a summary of emissions for each individual construction phase, assuming incorporation of standard dust control measures (e.g., watering two times daily during grading, applying soil stabilizers on inactive sites, replacing ground cover on inactive areas as soon as possible, reducing speed on unpaved roads to 15 mph or less, and watering unpaved haul roads) would be implemented to reduce fugitive dust generation.

Based on the assumed construction schedule, the maximum daily emissions for all pollutants except ROGs occur during the grading portion of the construction. For ROGs, the maximum emissions would occur during construction of buildings, application of architectural coatings, and paving. It was assumed that all three Project construction activities would occur sequentially.

As illustrated in Table 5, emissions of all criteria pollutants related to Project construction would be below the significance thresholds. Furthermore, due to the fact that the construction is short-term in nature, construction would not result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation.

Table 5
DAILY CONSTRUCTION EMISSIONS

YEAR	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Pounds/day[1]						
2013	28.55	198.01	121.06	0.24	36.01	14.91
2014	58.59	150.12	114.21	0.20	11.86	10.29
Highest Daily Emissions	**58.59**	**198.01**	**121.06**	**0.24**	**36.01**	**14.91**
Screening-Level Thresholds	137	250	550	250	100	55
Above Screening-Level Thresholds?	***No***	***No***	***No***	***No***	***No***	***No***

[1]Maximum of summer and winter daily emissions

DPM is not included as a criteria pollutant. However, it recognized by the state of California as carcinogenic compounds. The risks associated with exposure to substances with carcinogenic effects are typically evaluated based on a lifetime of chronic exposure, which is defined in the CAPCOA Air Toxics "Hot Spots" Program Risk Assessment Guidelines (CAPCOA 1993) as 24 hours per day, seven days per week, 365 days per year, for 70 years. DPM would be emitted from heavy equipment used in the construction process. Because of the short-term nature of Project construction and the fact that heavy equipment exhaust emissions are not significant, exposure to diesel exhaust emissions during construction would not be significant.

4.1.2 Construction Structural Asbestos and Naturally Occurring Asbestos (NOA)

Asbestos is a known carcinogen, and inhalation of asbestos may result in the development of lung cancer or mesothelioma. The asbestos contents of many manufactured products have been regulated in the United States for a number of years. In California, where ACM may be encountered in the workplace during construction/demolition activities, construction safety is regulated by ASCI (29 CFR 1926.1101; 8 California Code of Regulations 1529), administered by OHSA and Cal-OSHA. During proposed demolition activities at Westfield Carlsbad, encountering structural asbestos in building and/or pipe installations is considered most likely to occur due to the nature of the old building materials.

Therefore, in accordance with Title 8 of the California Code of Regulations and prior to the commencement of demolition, certified ACM and LBP abatement personnel would survey the makeup of the existing structures to look for possible ACM, including LBP. Should asbestos be encountered during the analysis, proper steps would be executed to handle the materials and prevent the exposure of airborne asbestos fibers on people. Assuming these required measures

are taken to control and properly remove ACM and LBP from the site, impacts to air quality from construction would be less than significant.

4.1.3 Construction Odors

The only source of odor anticipated from the Proposed Project would be exhaust emissions from the diesel equipment and haul trucks. The Project construction period of less than two years (approximately 20 months) would be much less than the 70-year period used for risk determination. Thus, based on the temporary use of off-road heavy-duty diesel equipment during construction, combined with the highly dispersive properties of diesel PM, construction-related emissions would not expose sensitive receptors to substantial odors. Based on the distance to the nearest sensitive receptor (a minimum of 500 feet) from the construction activities (i.e., the source of odiferous emissions) and the small number of diesel-powered vehicles on-site, the potential odor impacts are expected to be less than significant.

4.2 NET OPERATIONAL CRITERIA POLLUTANT IMPACTS

The net operational impacts associated with the Proposed Project would include impacts associated with vehicular traffic, as well as area sources such as energy use, landscaping, consumer products use, and architectural coatings use. The proposed revitalization Project is primarily focused on the net increase of approximately 35,417 sf of the regional shopping center. According to the Transportation Study prepared for the Project (Gibson 2012), the Project has the potential to generate a total of new net trips of approximately 1,240 average daily trips (ADT), including 49 trips in the a.m. peak hour and 124 trips in the p.m. peak hour.

The total net operational impacts associated with area sources including energy use, landscaping, consumer products use, hearth emissions, and architectural coatings use for maintenance purposes were estimated using the CalEEMod model, Version 2011.1. It should be noted that the CalEEMod model does not contain San Diego-specific emission factors; therefore, emissions are based on California statewide averages. Also, the emissions estimates associated with proposed revitalization Project are limited to the net increase of approximately 35,417 sf of the regional shopping center.

As illustrated in Table 6, net operational emissions related to the Proposed Project are anticipated to be below the significance criteria and would therefore not cause or contribute to a violation of an air quality standard.

Table 6 NET OPERATIONAL EMISSIONS						
	ROGs	**NO_x**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
	Pounds/day[1]					
Area	0.98	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.02	0.02	0.00	0.00	0.00
Mobile	4.07	7.46	32.72	0.07	7.55	0.44
Waste	-	-	-	-	-	-
Water	-	-	-	-	-	-
TOTAL	**5.05**	**7.48**	**32.74**	**0.07**	**7.55**	**0.44**
Significance Screening Criteria	137	250	550	250	100	55
Above Screening Criteria?	***No***	***No***	***No***	***No***	***No***	***No***
	Tons/year					
Area	0.18	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.69	1.29	5.97	0.01	1.21	0.08
Waste	-	-	-	-	-	-
Water	-	-	-	-	-	-
TOTAL	**0.87**	**1.29**	**5.97**	**0.01**	**1.21**	**0.08**
Significance Screening Criteria	15	40	100	100	15	10
Above Screening Criteria?	***No***	***No***	***No***	***No***	***No***	***No***

[1]Maximum of summer and winter daily emissions

CARB also recommends evaluation of the potential for the formation of locally high concentrations of CO, known as CO "hot spots." To verify that the Project would not cause or contribute to a violation of the CO standard, a screening evaluation of the potential for CO "hot spots" was conducted. The Transportation Study evaluated whether or not there would be a decrease in the level of service at the roadways and/or intersections affected by the Proposed Project. The potential for CO "hot spots" was evaluated based on the results of the Transportation Study. The Transportation Project-Level Carbon Monoxide Protocol (Protocol; Caltrans 1998) was followed to determine whether a CO "hot spot" is likely to form due to Project-generated traffic. In accordance with the Protocol, CO "hot spots" are typically evaluated when (a) the level of service (LOS) of an intersection or roadway decreases to a LOS E or worse; (b) signalization and/or channelization is added to an intersection; and (c) sensitive receptors such as residences, commercial developments, schools, hospitals, etc. are located in the vicinity of the affected intersection or roadway segment.

The Transportation Study evaluated eighteen intersections in the Project vicinity to evaluate the Existing Conditions, Near-Term Conditions (Existing Conditions with Cumulative Projects), Near-Term Conditions with Project, Horizon Year Conditions (2030) and Horizon Year with Project (2030). The Transportation Study evaluated LOS for each intersection for each condition. Table 7 presents a summary of the LOS for each of the intersections evaluated.

Table 7
INTERSECTION LEVEL OF SERVICE SUMMARY

Intersection	Existing Conditions		Near Term Conditions (2020) Without Project		Near Term Condition with Project (2020)		Horizon Year Conditions (2030) Without Project		Horizon Year Conditions with Project (2030)	
	am	*pm*	*am*	*pm*	*am*	*pm*	*am*	*pm*	*am*	*pm*
El Camino Real /Fire Mountain Drive	B	B	B	B	B	B	B	B	B	B
Jefferson Street / Vista Way/Ivy Road	C	C	C	C	C	C	C	C	C	C
El Camino Real / Vista Way	C	D	C	D	C	D	B	D	B	D
Rancho del Oro Road / Vista Way	C	C	C	C	C	C	C	C	C	C
Jefferson Street / SR 78 WB Ramps	B	C	B	B	B	B	B	E	B	E
Jefferson Street / SR 78 EB Ramps	B	C	B	C	B	C	B	C	B	C
El Camino Real / SR 78 WB Ramps	B	C	B	C	B	C	B	C	B	C
El Camino Real / SR 78 EB Ramps	C	C	C	C	C	C	C	C	C	C
El Camino Real / Plaza Drive	A	A	C	C	C	C	C	C	C	C
Jefferson Street / Marron Road	A	A	C	D	C	D	C	D	C	D
Monroe Street / Marron Road	A	A	C	D	C	D	C	D	C	D

Table 7 (cont.)
INTERSECTION LEVEL OF SERVICE SUMMARY

Intersection	Existing Conditions		Near Term Conditions (2020) Without Project		Near Term Condition with Project (2020)		Horizon Year Conditions (2030) Without Project		Horizon Year Conditions with Project (2030)	
	am	*pm*	*am*	*pm*	*am*	*pm*	*am*	*pm*	*am*	*pm*
Project Driveway / Marron Road	A	A	A	B	B	B	A	B	A	B
El Camino Real / Marron Road	A	B	C	D	C	D	C	D	C	D
I-5 SB Ramps / Carlsbad Village Dr	A	B	C	C	C	C	C	C	C	C
I-5 NB Ramps / Carlsbad Village Dr	A	B	C	C	C	C	C	C	C	C
Monroe Street / Carlsbad Village Dr	A	A	C	D	C	D	C	D	C	D
El Camino Real / Carlsbad Village Dr	A	A	C	D	C	D	C	D	C	D
El Camino Real / Hosp Way	A	A	C	C	C	C	C	C	C	C

Note: It should be noted that the Jefferson Street and SR78 westbound ramps are operating at LOS E during the p.m. peak hours at horizon year without the Project.
Source: Gibson Transportation Consulting 2012.

Based on the Transportation Study (Gibson 2012), there would be no Project -related traffic that would cause a significant degradation to LOS E or worse for any of the intersections analyzed. Therefore, no CO hotspot analysis is required.

Operation Related Mobile and Area TAC Sources

Mobile sources of TACs could include proposed land uses that involve the long-term use of heavy-duty diesel trucks. Implementation of the Proposed Project would include development of commercial land uses, which may include facilities that require the long-term use of heavy duty diesel trucks (e.g., loading docks). The operation of such a source could result in the exposure of sensitive receptors, especially those within close proximity, to toxic air emissions that exceed the significance threshold.

Sources of TAC emissions include diesel-fueled engine and possible food-service facility operations. Delivery truck travel, truck idling, and operation of the emergency back-up power generator are emission sources of DPM from diesel-fueled engines. Trucks entering and leaving

the Proposed Project would include deliveries associated with the retail stores, gas stations, and possible food service establishments. Trucks idling would occur in the shipping and receiving delivery dock areas. Trucks would be limited to an idle time not to exceed five minutes for entering or exiting the truck delivery well, in accordance with California State Legislation. The loading delivery docks are the only locations where routine truck idling associated with operation of the Project would be expected.

At the time of writing, the types of tenants that would occupy retail space at the Project site are unknown. It is possible that restaurants serving the residential uses could be included as tenants. Restaurants emit organic gases from the cooking of animal fats and oils. Emissions would be controlled through to an exhaust hood to a roof-top vent. It is possible that operation of the restaurant would require use of trucks equipped with transportation refrigeration storage units (TRUs) to deliver cold-stored food items. Trucks equipped with TRUs typically result in higher TAC emissions, because they are equipped with diesel generator sets to keep perishable food cold, in addition to diesel engine exhaust from the truck. However, it is not anticipated that the retail establishments would experience high truck volumes (i.e., greater than 100 commercial trucks per day or 40 TRU-equipped trucks per day as defined by ARB as the screening level) delivering materials on a frequent basis.

Therefore, onsite or offsite sensitive receptors would not be exposed to substantial TAC concentrations from these sources.

Operational Odors

The Proposed Project is a commercial retail development and would not include land uses that would be sources of nuisance odors. In addition, the majority of uses surrounding the site are commercial in nature, although residential development is situated near the El Camino Real/Marron Road intersection, above the SDP area. Because there is little to no potential for new odor sources, the potential for odor impacts associated with the Project would be less than significant.

4.3 PROJECT GREENHOUSE GAS EMISSIONS

The methodologies recommended in the CCAR General Reporting Protocol (Protocol) (CCAP 2007) were followed to calculate GHG emissions from the Project. Based on the Protocol, GHG reporting includes the following sources:

- Direct emissions from mobile source combustion
- Direct emissions from stationary combustion
- Indirect emissions from electricity use
- Direct process emissions
- Direct fugitive emissions

The relevant emissions included direct emissions from mobile source emissions and indirect emissions from electricity use and other sources. No direct stationary combustion, process, or fugitive emissions were calculated for the Proposed Project because these sources would be associated with industrial or larger commercial projects.

The Protocol indicates that emissions from operations, facilities, and sources should be reported. The Protocol recognizes the concept of management control, and indicates that management control may be defined in either operational or financial terms. Operational control is the authority to develop and carry out the operating or health, safety and environmental policies of an operation or at a facility. Financial control is the ability to dictate or direct the financial policies of the entity. For the purposes of this analysis, management control of the Proposed Project is assumed to encompass the development of the Project and options for construction and operation of the Project.

4.3.1 Methodology

The proposed Project could result in GHG emissions resulting from both construction and operational impacts. Construction impacts include short-term emissions associated with the construction of the Project. Operational impacts include long-term emissions associated with the traffic generated by the Project, as well as water and energy consumption.

The equation below provides the basic calculation required to determine CO_2e from the total mass of a given GHG using the GWPs published by the IPCC.

Metric Tons of CO_2e = Metric Tons of GHG X GWP.

This method was used to evaluate GHG emissions during construction and operation of the proposed Project. For this analysis, only CO_2, CH_4, and N_2O are considered due to the relatively large contribution of these gases in comparison to other GHGs produced during the Project construction and operation phase.

The GHG emission estimates were calculated using CalEEMod. CalEEMod is a computer program that can be used to estimate emissions associated with land development projects in California such as residential neighborhoods, shopping centers, and office buildings; area sources such as gas appliances, wood stoves, fireplaces, and landscape maintenance equipment; and construction projects. CalEEMod, which stands for "California Emission Estimator Model" is an air quality modeling program that estimates air pollution emissions in pounds per day (lbs/day) or metric tons per year (mtpy) for various land uses, area sources, construction projects, and project operations. Mitigation measures can also be specified to analyze the effects of mitigation on project emissions. The CalEEMod model uses the CARB EMFAC2007 model for on-road vehicle emissions and the OFFROAD2007 model for off-road vehicle emissions. CalEEMod includes CO_2, N_2O, and CH_4 emissions factors, the principal GHG constituent.

GHG emissions are classified as direct and indirect. Direct emissions are associated with the production of GHG at the site. These would include the combustion of natural gas in heaters or

stoves, the combustion of fuel in engines or construction vehicles, and fugitive emissions from valves and connections, which include CH_4 as a component. Indirect emissions include the emissions from vehicles (both gasoline and diesel) delivering materials and equipment to the pro Project ject site or the use of electricity. Electricity produces GHG emissions because of the common use of fossil fuels for the generation of electricity, especially in Southern California.

Indirect GHG emissions are also associated with water use, as electricity is required to pump and treat water that would be used at the Proposed Project. Case studies documented by the EPA demonstrate that water treatment plants, in combination with the California electricity usage and GHG emission rate, generate up to 1.2 tons of CO_2 per million gallons of water used, due to electricity use.

Indirect GHG emission associated with trash services, and other services that might visit the Proposed Project site are accounted for in the CalEEMod calculations, which incorporate the vehicle travel of diesel trucks that would visit and service the Proposed Project.

4.3.2 Construction Greenhouse Gas Emissions

Construction GHG emissions associated with the development of up to approximately 35,417 sf of net new GLA were calculated for the three GHGs of primary concern (CO_2, CH_4, and N_2O) that would be emitted from Project construction. In addition to the net 35,417-sf development, the Proposed Project also includes the renovation of 225,631 sf of the mall. All renovation work would include the upgrade of the building energy efficiency and water conservation in accordance to the latest Title 24 and CalGreen building codes implemented during year 2013 (i.e., the year of expected construction start date).

GHG emissions would be associated with the construction phase of the Project through use of heavy equipment and vehicle trips. Emissions of GHGs would be temporary. As shown in Table 8, based on emission estimates from the CalEEMod model for heavy construction equipment and vehicle trips, total GHGs associated with construction are estimated at 3,545.74 metric tons of CO_2 total for the duration of construction.

Table 8
TOTAL CONSTRUCTION GHG EMISSIONS

Calendar Year	CO_2	CH_4	N_2O	CO_2e
2013	2,155.22	0.27	0.00	2,160.83
2014	1,381.32	0.17	0.00	1,384.91
TOTAL (metric tons)	**--**	**--**	**--**	**3,545.74**
Amortized over 30 years (metric tons)				**118.19**

The construction phase of the Project is short-term and temporary, with no long-term potential to emit annual GHG pollutants from construction-related sources. For construction-phase Project emissions, GHGs are quantified and amortized over the life of the Project. To amortize the emissions over the life of the Project, the SCAQMD guidelines recommend calculating the total

greenhouse gas emissions for the construction activities, dividing it by the Project life (i.e., 30 years for commercial projects). Amortized over 30 years, construction equipment would contribute 118.19 metric tons per year of CO_2 equivalent emissions to the Project's total. As such, construction of the Proposed Project would have a negligible effect on any increase in regional, state, national and global GHG emissions.

4.3.3 Operational Greenhouse Gas Emissions

Operation of the Proposed Project would result in GHG emissions from vehicular traffic generated by patrons/employees, area sources (landscape maintenance), energy consumption (natural gas appliances and electrical generation), solid waste generation, and water supply. With respect to the Proposed Project operation phase, direct GHG emissions would be associated with the natural gas combustion (furnace and water heaters), use of other fuel-consuming equipment (lawn care equipment), etc. Indirect emissions would be associated with electrical generation, water consumption, and vehicle trips. Emissions associated with vehicular traffic, electrical generation, and water supply would be reduced by implementing GHG reduction measures, as indicated below.

Energy Use

Emissions associated with energy use would arise from the combustion of fossil fuels to provide energy for the regional shopping center. The Proposed Project is assumed to use purchased electricity for cooling, appliances and plug-loads, and natural gas for cooking and water heating. Emissions of GHGs from the retail shopping center expansion development were projected based on estimated annual energy use.

The Proposed Project would be constructed in accordance with the current 2008 Title 24. As discussed above, the current Title 24 2008 includes standards to achieve a minimum 15-percent greater energy efficiency than Title 24. Because the model estimates of energy emissions due to the Project use energy consumption data applicable to approximately year 2005, these emission rates were reduced by 15 percent to account for the increased energy efficiency standards now present in the 2008 Title 24. It should be noted that electricity emissions in CalEEMod were reduced by 15 percent to account for the adopted RPS, and adjusted baseline energy efficiency standards (i.e., from 2005 to 2008), in consistent with the CARB 2011 Scoping Plan projections.

Additionally, the Project would comply with the proposed 2012 California Green Building (CalGreen) Code's energy efficiency rates of 20-percent improvements (including up to 40-percent improvements with the indoor and outdoor lightning technology) for the entire 225,631 sf of the mall renovation and the net 35,417 sf new development (i.e., total site improvements would be to 261,048 sf). By exceeding the current 2008 Title 24 energy efficiency standards by 20 percent, the Proposed Project would reduce natural gas GHG emissions by 20 percent. (Please note that these GHG emission reduction credits were taken for the entire 261,048-sf project since both the new construction and renovated space would comply with the regulations as part of the Project design and City of Carlsbad requirements. Thus, the Proposed Project estimates assume the current 2008 energy efficiency standards plus the 2012 CalGreen Building standards for the associated 225,631 sf energy demand rates).

Compliance with Title 24 (2008) and CalGreen building standards as part of the Project design would result in the emission of a negative 167.99 metric tons annually for the Proposed Project for energy sources.

Water Consumption

Water use and energy use are often closely linked. The provision of potable water to commercial and residential consumers requires large amounts of energy associated with five stages: (1) source and conveyance, (2) treatment, (3) distribution, (4) end use and (5) wastewater treatment. According to the 2008 Water Study for the Westfield Carlsbad Project, which assessed a 145,933-square foot expansion of the shopping center, the potable water demand for the then-proposed SDP would have increased water demand by 23.3 gallons per minute (gpm) (Dexter Wilson 2008). As the current proposed SDP has been substantially reduced relative to the formerly proposed project, the associated potable water demand would be reduced accordingly. Specifically, with the addition of 35,417 sf under the current SDP, the regional shopping center would require an additional 5.66 gpm (over existing conditions), thereby requiring an additional 8,145 gpd, or 2,972,925 gallons per year.

Since the Proposed Project would be constructed in accordance with the current (2008) Title 24 and CalGreen building code, the projected water emissions were adjusted to account for the recent CalGreen mandate to reduce water consumption by 20 percent. The CalGreen mandate for water conservation includes the installation of low-flow bathroom faucet (32% reduction in flow), low-flow kitchen faucet (18% reduction in flow), low-flow toilet (20% reduction in flow), low-flow shower (20% reduction in flow), and use water-efficient irrigation systems (6.1% reduction in flow). Based on the CalEEMod analysis for the current SDP, emissions of CO_2e water use were estimated at 17.56 metric tons per year.

Vehicle Use

Mobile-source GHG emissions were estimated based on the projected ADTs from the Transportation Study (Gibson 2012). Emissions of CO_2 and CH_4 were obtained from the EMFAC2007 model. Based on the maximum of approximately 1,240 ADT projected for the Proposed Project, emissions of CO_2e vehicle GHGs were estimated at 867.02 metric tons per year.

Solid Waste Generation

The Proposed Project would generate solid waste, and would therefore result in CO_2e emissions associated with landfill offgasing. Based on the CalEEMod analysis for the Proposed Project, emissions of CO_2e solid waste generation were estimated at 8.46 metric tons per year.

Combined Sources

As shown in Table 9, estimated Project -related operational GHG emissions are 843.24 metric tons of CO_2e emissions per year; thus, the Proposed Project would produce less GHG emissions than the screening threshold of 900 metric tons per year. In accordance with this CAPCOA screening threshold, the GHG impacts associated with the Proposed Project would be less than significant.

Table 9 SUMMARY OF ESTIMATED OPERATIONAL GREENHOUSE GAS EMISSIONS				
Emission Source	**Annual Net Emissions (metric tons/year)**			
	CO_2	**CH_4**	**N_2O**	**CO_2 Equivalents**
Amortized Construction	--	--	--	118.19
Area	0.00	0.00	0.00	0.00
Energy	-167.10	-0.01	0.00	-167.99
Mobile	866.17	0.04	0.00	867.02
Waste	3.77	0.22	0.00	8.46
Water	15.64	0.06	0.00	17.56
TOTAL CO_2 Equivalent Emissions				**843.24**
CAPCOA Screening Threshold				**900.00**
Less than Significant?				**Yes**

5.0 CUMULATIVE IMPACTS

In analyzing cumulative impacts from a proposed project, the analysis must specifically evaluate a project's contribution to the cumulative increase in pollutants for which the SDAB is listed as "non-attainment" for the CAAQS. A project that has a significant impact on air quality with regard to emissions of PM_{10}, NO_x and/or ROCs, as determined by the screening criteria outlined above, would have a significant cumulative effect. In the event direct impacts from a project are less than significant, a project may still have a cumulatively considerable impact on air quality if the emissions from the project, in combination with the emissions from other proposed or reasonably foreseeable future projects, are in excess of screening levels identified above, and the project's contribution accounts for more than an insignificant proportion of the cumulative total emissions.

With regard to past and present development, the background ambient air quality, as measured at the monitoring stations maintained and operated by the SDAPCD, measures the concentrations of pollutants from existing sources. Past and present development impacts are therefore included in the background ambient air quality data.

The Transportation Study took into account traffic associated with future growth in the area in the near term and future evaluations. Based on the Transportation Study, the LOS would not change at most affected intersections; thus, the cumulative traffic would not cause a CO "hot spot" to form due to cumulative traffic impacts.

As shown in the construction emissions evaluation above in Section 4.1, the emissions of PM_{10} are below the significance levels. Because of the localized nature of PM_{10} impacts, and because all of the past, present, and reasonably foreseeable future projects would not be undergoing

construction at the same time as the Proposed Project, the PM_{10} impacts associated with construction would not be cumulatively considerable. Furthermore, because the Project's operational emissions of PM_{10} are less than one percent of the daily and annual significance threshold, the Project would not result in a cumulatively considerable net increase of PM_{10}.

With regard to cumulative impacts associated with O_3 precursors, since the Proposed Project is consistent with the land use assumed in the General Plan, it has been accounted for in the O_3 attainment demonstration. Thus, the Proposed Project would not result in a cumulatively significant impact on the ambient air quality.

It is difficult to estimate GHG impacts of other projects to assess the potential for cumulative impacts. Emissions for reasonably foreseeable future projects with related impacts are dependent on the individual projects and project design, and cannot be determined at this time. As discussed in Section 4.3.2, the Project will be consistent with the goals of AB 32. Therefore, because the Project will be consistent with AB 32's goals of reducing GHG emissions to 1990 levels by 2020, the Project's effect on GHG emissions will be less than cumulatively considerable.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 CRITERIA POLLUTANTS

In summary, the Proposed Project would result in emissions of criteria pollutants for both the construction and operational phases of the Project. The air quality impact analysis evaluated the potential for adverse impacts to the ambient air quality due to construction and operational emissions. Construction emissions would include emissions associated with fugitive dust, heavy construction equipment and construction worker commuting to and from the site. The emissions associated with construction would be below the Significance Determination Thresholds for all criteria pollutants during construction and would be temporary in nature (i.e., lasting less than two years). Thus, the Proposed Project would not result in a significant impact based on construction emissions.

Operational emissions would be associated with emissions associated with area sources such as energy use, and with vehicles accessing the Project site. Operational emissions would be below the Significance Determination Thresholds. In addition, the Project would not conflict with the RAQS or SIP. Thus, the Proposed Project would not result in a significant impact based on operational emissions.

6.2 GREENHOUSE GASES

Because the Proposed Project would be required to comply with 2008 Title 24, as well as the 2010 CalGreen building standards, which have the effect of reducing energy consumption through energy and water efficient design, it would not result in a significant impact based on operational GHG emissions. No mitigation measures are required, as Project -related GHG emissions are consistent with the goals of AB 32.

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Attachment A

CALEEMOD EMISSION CALCULATIONS

Westfield Carlsbad Construction and Renovation

San Diego County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Health Club	41.15	1000sqft
High Turnover (Sit Down Restaurant)	79.16	1000sqft
Movie Theater (No Matinee)	54	1000sqft
Regional Shopping Center	60.44	1000sqft
Strip Mall	26.3	1000sqft

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Utility Company**	San Diego Gas & Electric
Climate Zone	13	**Precipitation Freq (Days)**	40		

1.3 User Entered Comments

Project Characteristics -

Land Use - Shopping Center Building Addition = 60,440 sf anchor stores, 54,000 sf movie theater, 41,145 sf gym, 79,163 sf restaurants/retail shops, and 26,300 sf strip mall north of Marron Rd.

Construction Phase - Demolition activity to occur 3 to 4 months (86 days), grading to occur 1 month (22 days), building construction and renovation to occur 12 to 15 months (281 days), paving activity to occur 1 to 2 months (23 days), architectural coating of entire mall to occur 6 to 8 months (109 days).

Off-road Equipment - construction equipment would assume to include 3 aerial lifts, 1 air compressor, 1 cemet/mortar mixer, 1 forklift, and 1 rough terrain forklift.

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	28.46	197.61	120.97	0.24	27.76	11.47	36.00	3.44	11.47	14.91	0.00	24,101.83	0.00	2.54	0.00	24,155.21
2014	58.58	150.04	114.02	0.20	1.71	10.23	11.86	0.08	10.23	10.29	0.00	18,985.56	0.00	2.33	0.00	19,034.46
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	20.44	111.99	130.23	0.24	19.81	4.40	23.12	1.61	4.40	6.01	0.00	24,101.83	0.00	2.54	0.00	24,155.21
2014	57.89	100.70	114.55	0.20	1.29	4.36	5.65	0.08	4.36	4.44	0.00	18,985.56	0.00	2.33	0.00	19,034.46
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	7.24	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.45	4.10	3.45	0.02		0.00	0.31		0.00	0.31		4,923.02		0.09	0.09	4,952.98
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**7.69**	**4.10**	**3.45**	**0.02**	**0.00**	**0.00**	**0.31**	**0.00**	**0.00**	**0.31**		**4,923.02**		**0.09**	**0.09**	**4,952.98**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.82	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.43	3.91	3.29	0.02		0.00	0.30		0.00	0.30		4,695.56		0.09	0.09	4,724.14
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**7.25**	**3.91**	**3.29**	**0.02**	**0.00**	**0.00**	**0.30**	**0.00**	**0.00**	**0.30**		**4,695.56**		**0.09**	**0.09**	**4,724.14**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Demolition - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.61	0.00	2.61	0.00	0.00	0.00						0.00
Off-Road	18.12	118.34	78.50	0.14		7.95	7.95		7.95	7.95		13,508.43		1.62		13,542.54
Total	**18.12**	**118.34**	**78.50**	**0.14**	**2.61**	**7.95**	**10.56**	**0.00**	**7.95**	**7.95**		**13,508.43**		**1.62**		**13,542.54**

3.2 Demolition - 2013

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.57	6.71	3.14	0.01	23.91	0.25	24.15	0.03	0.25	0.28		985.26		0.03		985.84
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.56	0.64	6.46	0.01	1.24	0.04	1.28	0.05	0.04	0.09		993.79		0.06		995.12
Total	**1.13**	**7.35**	**9.60**	**0.02**	**25.15**	**0.29**	**25.43**	**0.08**	**0.29**	**0.37**		**1,979.05**		**0.09**		**1,980.96**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.18	0.00	1.18	0.00	0.00	0.00						0.00
Off-Road	13.06	70.14	80.14	0.14		3.02	3.02		3.02	3.02	0.00	13,508.43		1.62		13,542.54
Total	**13.06**	**70.14**	**80.14**	**0.14**	**1.18**	**3.02**	**4.20**	**0.00**	**3.02**	**3.02**	**0.00**	**13,508.43**		**1.62**		**13,542.54**

3.2 Demolition - 2013

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.57	6.71	3.14	0.01	17.70	0.25	17.95	0.03	0.25	0.28		985.26		0.03		985.84
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.56	0.64	6.46	0.01	0.93	0.04	0.97	0.05	0.04	0.09		993.79		0.06		995.12
Total	**1.13**	**7.35**	**9.60**	**0.02**	**18.63**	**0.29**	**18.92**	**0.08**	**0.29**	**0.37**		**1,979.05**		**0.09**		**1,980.96**

3.3 Fine Grading - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.53	0.00	6.53	3.31	0.00	3.31						0.00
Off-Road	25.58	184.04	106.95	0.21		10.95	10.95		10.95	10.95		20,990.50		2.29		21,038.59
Total	**25.58**	**184.04**	**106.95**	**0.21**	**6.53**	**10.95**	**17.48**	**3.31**	**10.95**	**14.26**		**20,990.50**		**2.29**		**21,038.59**

3.3 Fine Grading - 2013

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.08	12.77	5.99	0.02	11.70	0.47	12.17	0.06	0.47	0.54		1,876.93		0.05		1,878.03
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.70	0.80	8.03	0.01	1.54	0.05	1.59	0.06	0.05	0.11		1,234.40		0.08		1,236.04
Total	**1.78**	**13.57**	**14.02**	**0.03**	**13.24**	**0.52**	**13.76**	**0.12**	**0.52**	**0.65**		**3,111.33**		**0.13**		**3,114.07**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.94	0.00	2.94	1.49	0.00	1.49						0.00
Off-Road	16.04	98.42	116.21	0.21		3.87	3.87		3.87	3.87	0.00	20,990.50		2.29		21,038.59
Total	**16.04**	**98.42**	**116.21**	**0.21**	**2.94**	**3.87**	**6.81**	**1.49**	**3.87**	**5.36**	**0.00**	**20,990.50**		**2.29**		**21,038.59**

3.3 Fine Grading - 2013

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.08	12.77	5.99	0.02	8.67	0.47	9.15	0.06	0.47	0.54		1,876.93		0.05		1,878.03
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.70	0.80	8.03	0.01	1.15	0.05	1.21	0.06	0.05	0.11		1,234.40		0.08		1,236.04
Total	**1.78**	**13.57**	**14.02**	**0.03**	**9.82**	**0.52**	**10.36**	**0.12**	**0.52**	**0.65**		**3,111.33**		**0.13**		**3,114.07**

3.4 Building Construction - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	27.23	150.31	105.66	0.18		10.45	10.45		10.45	10.45		16,777.01		2.44		16,828.34
Total	**27.23**	**150.31**	**105.66**	**0.18**		**10.45**	**10.45**		**10.45**	**10.45**		**16,777.01**		**2.44**		**16,828.34**

3.4 Building Construction - 2013

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.63	7.34	4.20	0.01	0.40	0.24	0.64	0.03	0.24	0.27		1,172.18		0.03		1,172.83
Worker	0.60	0.68	6.87	0.01	1.32	0.05	1.36	0.05	0.05	0.09		1,056.56		0.07		1,057.97
Total	**1.23**	**8.02**	**11.07**	**0.02**	**1.72**	**0.29**	**2.00**	**0.08**	**0.29**	**0.36**		**2,228.74**		**0.10**		**2,230.80**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	19.21	93.27	104.36	0.18		4.09	4.09		4.09	4.09	0.00	16,777.01		2.44		16,828.34
Total	**19.21**	**93.27**	**104.36**	**0.18**		**4.09**	**4.09**		**4.09**	**4.09**	**0.00**	**16,777.01**		**2.44**		**16,828.34**

3.4 Building Construction - 2013

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.63	7.34	4.20	0.01	0.30	0.24	0.54	0.03	0.24	0.27		1,172.18		0.03		1,172.83
Worker	0.60	0.68	6.87	0.01	0.99	0.05	1.03	0.05	0.05	0.09		1,056.56		0.07		1,057.97
Total	**1.23**	**8.02**	**11.07**	**0.02**	**1.29**	**0.29**	**1.57**	**0.08**	**0.29**	**0.36**		**2,228.74**		**0.10**		**2,230.80**

3.4 Building Construction - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	24.95	140.60	103.83	0.18		9.45	9.45		9.45	9.45		16,777.02		2.24		16,824.01
Total	**24.95**	**140.60**	**103.83**	**0.18**		**9.45**	**9.45**		**9.45**	**9.45**		**16,777.02**		**2.24**		**16,824.01**

3.4 Building Construction - 2014

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.58	6.80	3.87	0.01	0.40	0.22	0.62	0.03	0.22	0.25		1,174.10		0.03		1,174.69
Worker	0.56	0.62	6.31	0.01	1.32	0.05	1.36	0.05	0.05	0.09		1,034.45		0.06		1,035.76
Total	**1.14**	**7.42**	**10.18**	**0.02**	**1.72**	**0.27**	**1.98**	**0.08**	**0.27**	**0.34**		**2,208.55**		**0.09**		**2,210.45**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	19.21	93.27	104.36	0.18		4.09	4.09		4.09	4.09	0.00	16,777.02		2.24		16,824.01
Total	**19.21**	**93.27**	**104.36**	**0.18**		**4.09**	**4.09**		**4.09**	**4.09**	**0.00**	**16,777.02**		**2.24**		**16,824.01**

3.4 Building Construction - 2014

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.58	6.80	3.87	0.01	0.30	0.22	0.52	0.03	0.22	0.25		1,174.10		0.03		1,174.69
Worker	0.56	0.62	6.31	0.01	0.99	0.05	1.03	0.05	0.05	0.09		1,034.45		0.06		1,035.76
Total	**1.14**	**7.42**	**10.18**	**0.02**	**1.29**	**0.27**	**1.55**	**0.08**	**0.27**	**0.34**		**2,208.55**		**0.09**		**2,210.45**

3.5 Architectural Coating - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	55.45					0.00	0.00		0.00	0.00						0.00
Off-Road	3.02	15.84	12.96	0.02		1.22	1.22		1.22	1.22		1,841.55		0.27		1,847.25
Total	**58.47**	**15.84**	**12.96**	**0.02**		**1.22**	**1.22**		**1.22**	**1.22**		**1,841.55**		**0.27**		**1,847.25**

3.5 Architectural Coating - 2014

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.11	0.12	1.25	0.00	0.26	0.01	0.27	0.01	0.01	0.02		204.84		0.01		205.10
Total	**0.11**	**0.12**	**1.25**	**0.00**	**0.26**	**0.01**	**0.27**	**0.01**	**0.01**	**0.02**		**204.84**		**0.01**		**205.10**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	55.45					0.00	0.00		0.00	0.00						0.00
Off-Road	2.32	10.71	11.99	0.02		0.50	0.50		0.50	0.50	0.00	1,841.55		0.27		1,847.25
Total	**57.77**	**10.71**	**11.99**	**0.02**		**0.50**	**0.50**		**0.50**	**0.50**	**0.00**	**1,841.55**		**0.27**		**1,847.25**

3.5 Architectural Coating - 2014

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.11	0.12	1.25	0.00	0.20	0.01	0.20	0.01	0.01	0.02		204.84		0.01		205.10
Total	**0.11**	**0.12**	**1.25**	**0.00**	**0.20**	**0.01**	**0.20**	**0.01**	**0.01**	**0.02**		**204.84**		**0.01**		**205.10**

3.6 Paving - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	22.17	149.27	92.81	0.17		10.17	10.17		10.17	10.17		16,306.67		1.99		16,348.37
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**22.17**	**149.27**	**92.81**	**0.17**		**10.17**	**10.17**		**10.17**	**10.17**		**16,306.67**		**1.99**		**16,348.37**

3.6 Paving - 2014

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.69	0.77	7.81	0.01	1.63	0.06	1.69	0.06	0.06	0.12		1,280.26		0.08		1,281.88
Total	**0.69**	**0.77**	**7.81**	**0.01**	**1.63**	**0.06**	**1.69**	**0.06**	**0.06**	**0.12**		**1,280.26**		**0.08**		**1,281.88**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	13.24	78.85	91.58	0.17		3.37	3.37		3.37	3.37	0.00	16,306.67		1.99		16,348.37
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**13.24**	**78.85**	**91.58**	**0.17**		**3.37**	**3.37**		**3.37**	**3.37**	**0.00**	**16,306.67**		**1.99**		**16,348.37**

3.6 Paving - 2014

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.69	0.77	7.81	0.01	1.22	0.06	1.28	0.06	0.06	0.12		1,280.26		0.08		1,281.88
Total	**0.69**	**0.77**	**7.81**	**0.01**	**1.22**	**0.06**	**1.28**	**0.06**	**0.06**	**0.12**		**1,280.26**		**0.08**		**1,281.88**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

Increase Density

Increase Diversity

Improve Walkability Design

Increase Transit Accessibility

Improve Pedestrian Network

Implement NEV Network

Provide BRT System

Expand Transit Network

Increase Transit Frequency

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Unmitigated	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Health Club	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00		
Movie Theater (No Matinee)	0.00	0.00	0.00		
Regional Shopping Center	0.00	0.00	0.00		
Strip Mall	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Health Club	9.50	7.30	7.30	16.90	64.10	19.00
High Turnover (Sit Down Restaurant)	9.50	7.30	7.30	8.50	72.50	19.00
Movie Theater (No Matinee)	9.50	7.30	7.30	1.80	79.20	19.00
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.43	3.91	3.29	0.02		0.00	0.30		0.00	0.30		4,695.56		0.09	0.09	4,724.14
NaturalGas Unmitigated	0.45	4.10	3.45	0.02		0.00	0.31		0.00	0.31		4,923.02		0.09	0.09	4,952.98
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Health Club	1329.04	0.01	0.13	0.11	0.00		0.00	0.01		0.00	0.01		156.36		0.00	0.00	157.31
High Turnover (Sit Down Restaurant)	38228.1	0.41	3.75	3.15	0.02		0.00	0.28		0.00	0.28		4,497.43		0.09	0.08	4,524.80
Movie Theater (No Matinee)	1744.27	0.02	0.17	0.14	0.00		0.00	0.01		0.00	0.01		205.21		0.00	0.00	206.46
Regional Shopping Center	379.199	0.00	0.04	0.03	0.00		0.00	0.00		0.00	0.00		44.61		0.00	0.00	44.88
Strip Mall	165.005	0.00	0.02	0.01	0.00		0.00	0.00		0.00	0.00		19.41		0.00	0.00	19.53
Total		**0.44**	**4.11**	**3.44**	**0.02**		**0.00**	**0.30**		**0.00**	**0.30**		**4,923.02**		**0.09**	**0.08**	**4,952.98**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Health Club	1.22668	0.01	0.12	0.10	0.00		0.00	0.01		0.00	0.01		144.32		0.00	0.00	145.19
High Turnover (Sit Down Restaurant)	36.5885	0.39	3.59	3.01	0.02		0.00	0.27		0.00	0.27		4,304.53		0.08	0.08	4,330.72
Movie Theater (No Matinee)	1.60994	0.02	0.16	0.13	0.00		0.00	0.01		0.00	0.01		189.40		0.00	0.00	190.56
Regional Shopping Center	0.339458	0.00	0.03	0.03	0.00		0.00	0.00		0.00	0.00		39.94		0.00	0.00	40.18
Strip Mall	0.147712	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00		17.38		0.00	0.00	17.48
Total		**0.42**	**3.91**	**3.28**	**0.02**		**0.00**	**0.29**		**0.00**	**0.29**		**4,695.57**		**0.08**	**0.08**	**4,724.13**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.82	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	7.24	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.66					0.00	0.00		0.00	0.00						0.00
Consumer Products	5.59					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**7.25**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.66					0.00	0.00		0.00	0.00						0.00
Consumer Products	5.17					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**6.83**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

Westfield Carlsbad Construction and Renovation

San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Health Club	41.15	1000sqft
High Turnover (Sit Down Restaurant)	79.16	1000sqft
Movie Theater (No Matinee)	54	1000sqft
Regional Shopping Center	60.44	1000sqft
Strip Mall	26.3	1000sqft

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Utility Company**	San Diego Gas & Electric
Climate Zone	13	**Precipitation Freq (Days)**	40		

1.3 User Entered Comments

Project Characteristics -

Land Use - Shopping Center Building Addition = 60,440 sf anchor stores, 54,000 sf movie theater, 41,145 sf gym, 79,163 sf restaurants/retail shops, and 26,300 sf strip mall north of Marron Rd.

Construction Phase - Demolition activity to occur 3 to 4 months (86 days), grading to occur 1 month (22 days), building construction and renovation to occur 12 to 15 months (281 days), paving activity to occur 1 to 2 months (23 days), architectural coating of entire mall to occur 6 to 8 months (109 days).

Off-road Equipment - construction equipment would assume to include 3 aerial lifts, 1 air compressor, 1 cemet/mortar mixer, 1 forklift, and 1 rough terrain forklift.

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	28.55	198.01	121.06	0.24	27.76	11.48	36.01	3.44	11.48	14.91	0.00	23,997.37	0.00	2.54	0.00	24,050.73
2014	58.59	150.12	114.21	0.20	1.71	10.23	11.86	0.08	10.23	10.29	0.00	18,896.56	0.00	2.33	0.00	18,945.43
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	20.53	112.39	130.32	0.24	19.81	4.40	23.12	1.61	4.40	6.01	0.00	23,997.37	0.00	2.54	0.00	24,050.73
2014	57.90	100.87	114.74	0.20	1.29	4.36	5.65	0.08	4.36	4.44	0.00	18,896.56	0.00	2.33	0.00	18,945.43
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	7.24	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.45	4.10	3.45	0.02		0.00	0.31		0.00	0.31		4,923.02		0.09	0.09	4,952.98
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**7.69**	**4.10**	**3.45**	**0.02**	**0.00**	**0.00**	**0.31**	**0.00**	**0.00**	**0.31**		**4,923.02**		**0.09**	**0.09**	**4,952.98**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.82	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.43	3.91	3.29	0.02		0.00	0.30		0.00	0.30		4,695.56		0.09	0.09	4,724.14
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**7.25**	**3.91**	**3.29**	**0.02**	**0.00**	**0.00**	**0.30**	**0.00**	**0.00**	**0.30**		**4,695.56**		**0.09**	**0.09**	**4,724.14**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Demolition - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.61	0.00	2.61	0.00	0.00	0.00						0.00
Off-Road	18.12	118.34	78.50	0.14		7.95	7.95		7.95	7.95		13,508.43		1.62		13,542.54
Total	**18.12**	**118.34**	**78.50**	**0.14**	**2.61**	**7.95**	**10.56**	**0.00**	**7.95**	**7.95**		**13,508.43**		**1.62**		**13,542.54**

3.2 Demolition - 2013

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.58	6.87	3.41	0.01	23.91	0.25	24.16	0.03	0.25	0.28		980.11		0.03		980.71
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.62	0.70	6.13	0.01	1.24	0.04	1.28	0.05	0.04	0.09		917.59		0.06		918.86
Total	**1.20**	**7.57**	**9.54**	**0.02**	**25.15**	**0.29**	**25.44**	**0.08**	**0.29**	**0.37**		**1,897.70**		**0.09**		**1,899.57**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.18	0.00	1.18	0.00	0.00	0.00						0.00
Off-Road	13.06	70.14	80.14	0.14		3.02	3.02		3.02	3.02	0.00	13,508.43		1.62		13,542.54
Total	**13.06**	**70.14**	**80.14**	**0.14**	**1.18**	**3.02**	**4.20**	**0.00**	**3.02**	**3.02**	**0.00**	**13,508.43**		**1.62**		**13,542.54**

3.2 Demolition - 2013

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.58	6.87	3.41	0.01	17.70	0.25	17.95	0.03	0.25	0.28		980.11		0.03		980.71
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.62	0.70	6.13	0.01	0.93	0.04	0.97	0.05	0.04	0.09		917.59		0.06		918.86
Total	**1.20**	**7.57**	**9.54**	**0.02**	**18.63**	**0.29**	**18.92**	**0.08**	**0.29**	**0.37**		**1,897.70**		**0.09**		**1,899.57**

3.3 Fine Grading - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.53	0.00	6.53	3.31	0.00	3.31						0.00
Off-Road	25.58	184.04	106.95	0.21		10.95	10.95		10.95	10.95		20,990.50		2.29		21,038.59
Total	**25.58**	**184.04**	**106.95**	**0.21**	**6.53**	**10.95**	**17.48**	**3.31**	**10.95**	**14.26**		**20,990.50**		**2.29**		**21,038.59**

3.3 Fine Grading - 2013

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.11	13.10	6.49	0.02	11.70	0.48	12.18	0.06	0.48	0.54		1,867.13		0.05		1,868.26
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.76	0.87	7.62	0.01	1.54	0.05	1.59	0.06	0.05	0.11		1,139.74		0.08		1,141.32
Total	**1.87**	**13.97**	**14.11**	**0.03**	**13.24**	**0.53**	**13.77**	**0.12**	**0.53**	**0.65**		**3,006.87**		**0.13**		**3,009.58**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.94	0.00	2.94	1.49	0.00	1.49						0.00
Off-Road	16.04	98.42	116.21	0.21		3.87	3.87		3.87	3.87	0.00	20,990.50		2.29		21,038.59
Total	**16.04**	**98.42**	**116.21**	**0.21**	**2.94**	**3.87**	**6.81**	**1.49**	**3.87**	**5.36**	**0.00**	**20,990.50**		**2.29**		**21,038.59**

3.3 Fine Grading - 2013

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.11	13.10	6.49	0.02	8.67	0.48	9.15	0.06	0.48	0.54		1,867.13		0.05		1,868.26
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.76	0.87	7.62	0.01	1.15	0.05	1.21	0.06	0.05	0.11		1,139.74		0.08		1,141.32
Total	**1.87**	**13.97**	**14.11**	**0.03**	**9.82**	**0.53**	**10.36**	**0.12**	**0.53**	**0.65**		**3,006.87**		**0.13**		**3,009.58**

3.4 Building Construction - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	27.23	150.31	105.66	0.18		10.45	10.45		10.45	10.45		16,777.01		2.44		16,828.34
Total	**27.23**	**150.31**	**105.66**	**0.18**		**10.45**	**10.45**		**10.45**	**10.45**		**16,777.01**		**2.44**		**16,828.34**

3.4 Building Construction - 2013

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.66	7.47	4.74	0.01	0.40	0.25	0.64	0.03	0.25	0.28		1,162.91		0.03		1,163.59
Worker	0.65	0.75	6.52	0.01	1.32	0.05	1.36	0.05	0.05	0.09		975.54		0.06		976.89
Total	**1.31**	**8.22**	**11.26**	**0.02**	**1.72**	**0.30**	**2.00**	**0.08**	**0.30**	**0.37**		**2,138.45**		**0.09**		**2,140.48**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	19.21	93.27	104.36	0.18		4.09	4.09		4.09	4.09	0.00	16,777.01		2.44		16,828.34
Total	**19.21**	**93.27**	**104.36**	**0.18**		**4.09**	**4.09**		**4.09**	**4.09**	**0.00**	**16,777.01**		**2.44**		**16,828.34**

3.4 Building Construction - 2013

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.66	7.47	4.74	0.01	0.30	0.25	0.55	0.03	0.25	0.28		1,162.91		0.03		1,163.59
Worker	0.65	0.75	6.52	0.01	0.99	0.05	1.03	0.05	0.05	0.09		975.54		0.06		976.89
Total	**1.31**	**8.22**	**11.26**	**0.02**	**1.29**	**0.30**	**1.58**	**0.08**	**0.30**	**0.37**		**2,138.45**		**0.09**		**2,140.48**

3.4 Building Construction - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	24.95	140.60	103.83	0.18		9.45	9.45		9.45	9.45		16,777.02		2.24		16,824.01
Total	**24.95**	**140.60**	**103.83**	**0.18**		**9.45**	**9.45**		**9.45**	**9.45**		**16,777.02**		**2.24**		**16,824.01**

3.4 Building Construction - 2014

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.61	6.91	4.40	0.01	0.40	0.23	0.62	0.03	0.23	0.26		1,164.62		0.03		1,165.25
Worker	0.61	0.68	5.98	0.01	1.32	0.05	1.36	0.05	0.05	0.09		954.92		0.06		956.17
Total	**1.22**	**7.59**	**10.38**	**0.02**	**1.72**	**0.28**	**1.98**	**0.08**	**0.28**	**0.35**		**2,119.54**		**0.09**		**2,121.42**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	19.21	93.27	104.36	0.18		4.09	4.09		4.09	4.09	0.00	16,777.02		2.24		16,824.01
Total	**19.21**	**93.27**	**104.36**	**0.18**		**4.09**	**4.09**		**4.09**	**4.09**	**0.00**	**16,777.02**		**2.24**		**16,824.01**

3.4 Building Construction - 2014

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.61	6.91	4.40	0.01	0.30	0.23	0.53	0.03	0.23	0.26		1,164.62		0.03		1,165.25
Worker	0.61	0.68	5.98	0.01	0.99	0.05	1.03	0.05	0.05	0.09		954.92		0.06		956.17
Total	**1.22**	**7.59**	**10.38**	**0.02**	**1.29**	**0.28**	**1.56**	**0.08**	**0.28**	**0.35**		**2,119.54**		**0.09**		**2,121.42**

3.5 Architectural Coating - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	55.45					0.00	0.00		0.00	0.00						0.00
Off-Road	3.02	15.84	12.96	0.02		1.22	1.22		1.22	1.22		1,841.55		0.27		1,847.25
Total	**58.47**	**15.84**	**12.96**	**0.02**		**1.22**	**1.22**		**1.22**	**1.22**		**1,841.55**		**0.27**		**1,847.25**

3.5 Architectural Coating - 2014

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.12	0.14	1.18	0.00	0.26	0.01	0.27	0.01	0.01	0.02		189.09		0.01		189.34
Total	**0.12**	**0.14**	**1.18**	**0.00**	**0.26**	**0.01**	**0.27**	**0.01**	**0.01**	**0.02**		**189.09**		**0.01**		**189.34**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	55.45					0.00	0.00		0.00	0.00						0.00
Off-Road	2.32	10.71	11.99	0.02		0.50	0.50		0.50	0.50	0.00	1,841.55		0.27		1,847.25
Total	**57.77**	**10.71**	**11.99**	**0.02**		**0.50**	**0.50**		**0.50**	**0.50**	**0.00**	**1,841.55**		**0.27**		**1,847.25**

3.5 Architectural Coating - 2014

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.12	0.14	1.18	0.00	0.20	0.01	0.20	0.01	0.01	0.02		189.09		0.01		189.34
Total	**0.12**	**0.14**	**1.18**	**0.00**	**0.20**	**0.01**	**0.20**	**0.01**	**0.01**	**0.02**		**189.09**		**0.01**		**189.34**

3.6 Paving - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	22.17	149.27	92.81	0.17		10.17	10.17		10.17	10.17		16,306.67		1.99		16,348.37
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**22.17**	**149.27**	**92.81**	**0.17**		**10.17**	**10.17**		**10.17**	**10.17**		**16,306.67**		**1.99**		**16,348.37**

3.6 Paving - 2014

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.75	0.85	7.40	0.01	1.63	0.06	1.69	0.06	0.06	0.12		1,181.84		0.07		1,183.38
Total	**0.75**	**0.85**	**7.40**	**0.01**	**1.63**	**0.06**	**1.69**	**0.06**	**0.06**	**0.12**		**1,181.84**		**0.07**		**1,183.38**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	13.24	78.85	91.58	0.17		3.37	3.37		3.37	3.37	0.00	16,306.67		1.99		16,348.37
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**13.24**	**78.85**	**91.58**	**0.17**		**3.37**	**3.37**		**3.37**	**3.37**	**0.00**	**16,306.67**		**1.99**		**16,348.37**

3.6 Paving - 2014

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.75	0.85	7.40	0.01	1.22	0.06	1.28	0.06	0.06	0.12		1,181.84		0.07		1,183.38
Total	**0.75**	**0.85**	**7.40**	**0.01**	**1.22**	**0.06**	**1.28**	**0.06**	**0.06**	**0.12**		**1,181.84**		**0.07**		**1,183.38**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

Increase Density

Increase Diversity

Improve Walkability Design

Increase Transit Accessibility

Improve Pedestrian Network

Implement NEV Network

Provide BRT System

Expand Transit Network

Increase Transit Frequency

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Unmitigated	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Health Club	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00		
Movie Theater (No Matinee)	0.00	0.00	0.00		
Regional Shopping Center	0.00	0.00	0.00		
Strip Mall	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Health Club	9.50	7.30	7.30	16.90	64.10	19.00
High Turnover (Sit Down Restaurant)	9.50	7.30	7.30	8.50	72.50	19.00
Movie Theater (No Matinee)	9.50	7.30	7.30	1.80	79.20	19.00
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.43	3.91	3.29	0.02		0.00	0.30		0.00	0.30		4,695.56		0.09	0.09	4,724.14
NaturalGas Unmitigated	0.45	4.10	3.45	0.02		0.00	0.31		0.00	0.31		4,923.02		0.09	0.09	4,952.98
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Health Club	1329.04	0.01	0.13	0.11	0.00		0.00	0.01		0.00	0.01		156.36		0.00	0.00	157.31
High Turnover (Sit Down Restaurant)	38228.1	0.41	3.75	3.15	0.02		0.00	0.28		0.00	0.28		4,497.43		0.09	0.08	4,524.80
Movie Theater (No Matinee)	1744.27	0.02	0.17	0.14	0.00		0.00	0.01		0.00	0.01		205.21		0.00	0.00	206.46
Regional Shopping Center	379.199	0.00	0.04	0.03	0.00		0.00	0.00		0.00	0.00		44.61		0.00	0.00	44.88
Strip Mall	165.005	0.00	0.02	0.01	0.00		0.00	0.00		0.00	0.00		19.41		0.00	0.00	19.53
Total		**0.44**	**4.11**	**3.44**	**0.02**		**0.00**	**0.30**		**0.00**	**0.30**		**4,923.02**		**0.09**	**0.08**	**4,952.98**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Health Club	1.22668	0.01	0.12	0.10	0.00		0.00	0.01		0.00	0.01		144.32		0.00	0.00	145.19
High Turnover (Sit Down Restaurant)	36.5885	0.39	3.59	3.01	0.02		0.00	0.27		0.00	0.27		4,304.53		0.08	0.08	4,330.72
Movie Theater (No Matinee)	1.60994	0.02	0.16	0.13	0.00		0.00	0.01		0.00	0.01		189.40		0.00	0.00	190.56
Regional Shopping Center	0.339458	0.00	0.03	0.03	0.00		0.00	0.00		0.00	0.00		39.94		0.00	0.00	40.18
Strip Mall	0.147712	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00		17.38		0.00	0.00	17.48
Total		**0.42**	**3.91**	**3.28**	**0.02**		**0.00**	**0.29**		**0.00**	**0.29**		**4,695.57**		**0.08**	**0.08**	**4,724.13**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.82	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	7.24	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.66					0.00	0.00		0.00	0.00						0.00
Consumer Products	5.59					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**7.25**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.66					0.00	0.00		0.00	0.00						0.00
Consumer Products	5.17					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**6.83**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

Westfield Carlsbad Construction and Renovation

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Health Club	41.15	1000sqft
High Turnover (Sit Down Restaurant)	79.16	1000sqft
Movie Theater (No Matinee)	54	1000sqft
Regional Shopping Center	60.44	1000sqft
Strip Mall	26.3	1000sqft

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Utility Company**	San Diego Gas & Electric
Climate Zone	13	**Precipitation Freq (Days)**	40		

1.3 User Entered Comments

Project Characteristics -

Land Use - Shopping Center Building Addition = 60,440 sf anchor stores, 54,000 sf movie theater, 41,145 sf gym, 79,163 sf restaurants/retail shops, and 26,300 sf strip mall north of Marron Rd.

Construction Phase - Demolition activity to occur 3 to 4 months (86 days), grading to occur 1 month (22 days), building construction and renovation to occur 12 to 15 months (281 days), paving activity to occur 1 to 2 months (23 days), architectural coating of entire mall to occur 6 to 8 months (109 days).

Off-road Equipment - construction equipment would assume to include 3 aerial lifts, 1 air compressor, 1 cemet/mortar mixer, 1 forklift, and 1 rough terrain forklift.

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2013	3.31	19.65	14.05	0.02	1.37	1.30	2.67	0.06	1.30	1.37	0.00	2,155.22	2,155.22	0.27	0.00	2,160.83
2014	5.13	12.05	9.23	0.02	0.12	0.81	0.93	0.01	0.81	0.81	0.00	1,381.32	1,381.32	0.17	0.00	1,384.91
Total	**8.44**	**31.70**	**23.28**	**0.04**	**1.49**	**2.11**	**3.60**	**0.07**	**2.11**	**2.18**	**0.00**	**3,536.54**	**3,536.54**	**0.44**	**0.00**	**3,545.74**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2013	2.37	12.28	14.12	0.02	0.96	0.53	1.49	0.04	0.53	0.56	0.00	2,155.22	2,155.22	0.27	0.00	2,160.83
2014	4.62	7.93	9.19	0.02	0.09	0.35	0.44	0.01	0.35	0.35	0.00	1,381.32	1,381.32	0.17	0.00	1,384.91
Total	**6.99**	**20.21**	**23.31**	**0.04**	**1.05**	**0.88**	**1.93**	**0.05**	**0.88**	**0.91**	**0.00**	**3,536.54**	**3,536.54**	**0.44**	**0.00**	**3,545.74**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.32	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.08	0.75	0.63	0.00		0.00	0.06		0.00	0.06	0.00	2,709.22	2,709.22	0.09	0.04	2,723.93
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Waste						0.00	0.00		0.00	0.00	319.80	0.00	319.80	18.90	0.00	716.69
Water						0.00	0.00		0.00	0.00	0.00	285.12	285.12	1.68	0.05	334.38
Total	**1.40**	**0.75**	**0.63**	**0.00**	**0.00**	**0.00**	**0.06**	**0.00**	**0.00**	**0.06**	**319.80**	**2,994.34**	**3,314.14**	**20.67**	**0.09**	**3,775.00**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.25	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.08	0.71	0.60	0.00		0.00	0.05		0.00	0.05	0.00	2,361.68	2,361.68	0.07	0.04	2,374.57
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Waste						0.00	0.00		0.00	0.00	159.90	0.00	159.90	9.45	0.00	358.35
Water						0.00	0.00		0.00	0.00	0.00	232.66	232.66	1.34	0.04	272.09
Total	**1.33**	**0.71**	**0.60**	**0.00**	**0.00**	**0.00**	**0.05**	**0.00**	**0.00**	**0.05**	**159.90**	**2,594.34**	**2,754.24**	**10.86**	**0.08**	**3,005.01**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Demolition - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.11	0.00	0.11	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.78	5.09	3.37	0.01		0.34	0.34		0.34	0.34	0.00	526.81	526.81	0.06	0.00	528.14
Total	**0.78**	**5.09**	**3.37**	**0.01**	**0.11**	**0.34**	**0.45**	**0.02**	**0.34**	**0.36**	**0.00**	**526.81**	**526.81**	**0.06**	**0.00**	**528.14**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.02	0.28	0.14	0.00	0.89	0.01	0.90	0.00	0.01	0.01	0.00	38.35	38.35	0.00	0.00	38.37
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.02	0.03	0.27	0.00	0.05	0.00	0.05	0.00	0.00	0.00	0.00	36.42	36.42	0.00	0.00	36.47
Total	**0.04**	**0.31**	**0.41**	**0.00**	**0.94**	**0.01**	**0.95**	**0.00**	**0.01**	**0.01**	**0.00**	**74.77**	**74.77**	**0.00**	**0.00**	**74.84**

3.2 Demolition - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.05	0.00	0.05	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.56	3.02	3.44	0.01		0.13	0.13		0.13	0.13	0.00	526.81	526.81	0.06	0.00	528.14
Total	**0.56**	**3.02**	**3.44**	**0.01**	**0.05**	**0.13**	**0.18**	**0.01**	**0.13**	**0.14**	**0.00**	**526.81**	**526.81**	**0.06**	**0.00**	**528.14**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.02	0.28	0.14	0.00	0.66	0.01	0.67	0.00	0.01	0.01	0.00	38.35	38.35	0.00	0.00	38.37
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.02	0.03	0.27	0.00	0.03	0.00	0.04	0.00	0.00	0.00	0.00	36.42	36.42	0.00	0.00	36.47
Total	**0.04**	**0.31**	**0.41**	**0.00**	**0.69**	**0.01**	**0.71**	**0.00**	**0.01**	**0.01**	**0.00**	**74.77**	**74.77**	**0.00**	**0.00**	**74.84**

3.3 Fine Grading - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.07	0.00	0.07	0.04	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.28	2.02	1.18	0.00		0.12	0.12		0.12	0.12	0.00	209.41	209.41	0.02	0.00	209.89
Total	**0.28**	**2.02**	**1.18**	**0.00**	**0.07**	**0.12**	**0.19**	**0.04**	**0.12**	**0.16**	**0.00**	**209.41**	**209.41**	**0.02**	**0.00**	**209.89**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.01	0.14	0.07	0.00	0.11	0.01	0.12	0.00	0.01	0.01	0.00	18.69	18.69	0.00	0.00	18.70
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.08	0.00	0.01	0.00	0.02	0.00	0.00	0.00	0.00	11.57	11.57	0.00	0.00	11.59
Total	**0.02**	**0.15**	**0.15**	**0.00**	**0.12**	**0.01**	**0.14**	**0.00**	**0.01**	**0.01**	**0.00**	**30.26**	**30.26**	**0.00**	**0.00**	**30.29**

3.3 Fine Grading - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.03	0.00	0.03	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.18	1.08	1.28	0.00		0.04	0.04		0.04	0.04	0.00	209.41	209.41	0.02	0.00	209.89
Total	**0.18**	**1.08**	**1.28**	**0.00**	**0.03**	**0.04**	**0.07**	**0.02**	**0.04**	**0.06**	**0.00**	**209.41**	**209.41**	**0.02**	**0.00**	**209.89**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.01	0.14	0.07	0.00	0.08	0.01	0.09	0.00	0.01	0.01	0.00	18.69	18.69	0.00	0.00	18.70
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.08	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	11.57	11.57	0.00	0.00	11.59
Total	**0.02**	**0.15**	**0.15**	**0.00**	**0.09**	**0.01**	**0.10**	**0.00**	**0.01**	**0.01**	**0.00**	**30.26**	**30.26**	**0.00**	**0.00**	**30.29**

3.4 Building Construction - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.08	11.50	8.08	0.01		0.80	0.80		0.80	0.80	0.00	1,164.00	1,164.00	0.17	0.00	1,167.56
Total	**2.08**	**11.50**	**8.08**	**0.01**		**0.80**	**0.80**		**0.80**	**0.80**	**0.00**	**1,164.00**	**1,164.00**	**0.17**	**0.00**	**1,167.56**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.05	0.54	0.35	0.00	0.03	0.02	0.05	0.00	0.02	0.02	0.00	81.08	81.08	0.00	0.00	81.13
Worker	0.05	0.05	0.51	0.00	0.09	0.00	0.09	0.00	0.00	0.01	0.00	68.89	68.89	0.00	0.00	68.99
Total	**0.10**	**0.59**	**0.86**	**0.00**	**0.12**	**0.02**	**0.14**	**0.00**	**0.02**	**0.03**	**0.00**	**149.97**	**149.97**	**0.00**	**0.00**	**150.12**

3.4 Building Construction - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.47	7.13	7.98	0.01		0.31	0.31		0.31	0.31	0.00	1,164.00	1,164.00	0.17	0.00	1,167.56
Total	**1.47**	**7.13**	**7.98**	**0.01**		**0.31**	**0.31**		**0.31**	**0.31**	**0.00**	**1,164.00**	**1,164.00**	**0.17**	**0.00**	**1,167.56**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.05	0.54	0.35	0.00	0.02	0.02	0.04	0.00	0.02	0.02	0.00	81.08	81.08	0.00	0.00	81.13
Worker	0.05	0.05	0.51	0.00	0.07	0.00	0.07	0.00	0.00	0.01	0.00	68.89	68.89	0.00	0.00	68.99
Total	**0.10**	**0.59**	**0.86**	**0.00**	**0.09**	**0.02**	**0.11**	**0.00**	**0.02**	**0.03**	**0.00**	**149.97**	**149.97**	**0.00**	**0.00**	**150.12**

3.4 Building Construction - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.60	9.00	6.64	0.01		0.60	0.60		0.60	0.60	0.00	973.81	973.81	0.13	0.00	976.53
Total	**1.60**	**9.00**	**6.64**	**0.01**		**0.60**	**0.60**		**0.60**	**0.60**	**0.00**	**973.81**	**973.81**	**0.13**	**0.00**	**976.53**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.04	0.42	0.27	0.00	0.02	0.01	0.04	0.00	0.01	0.02	0.00	67.94	67.94	0.00	0.00	67.97
Worker	0.04	0.04	0.39	0.00	0.07	0.00	0.08	0.00	0.00	0.01	0.00	56.42	56.42	0.00	0.00	56.49
Total	**0.08**	**0.46**	**0.66**	**0.00**	**0.09**	**0.01**	**0.12**	**0.00**	**0.01**	**0.03**	**0.00**	**124.36**	**124.36**	**0.00**	**0.00**	**124.46**

3.4 Building Construction - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.23	5.97	6.68	0.01		0.26	0.26		0.26	0.26	0.00	973.81	973.81	0.13	0.00	976.53
Total	**1.23**	**5.97**	**6.68**	**0.01**		**0.26**	**0.26**		**0.26**	**0.26**	**0.00**	**973.81**	**973.81**	**0.13**	**0.00**	**976.53**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.04	0.42	0.27	0.00	0.02	0.01	0.03	0.00	0.01	0.02	0.00	67.94	67.94	0.00	0.00	67.97
Worker	0.04	0.04	0.39	0.00	0.06	0.00	0.06	0.00	0.00	0.01	0.00	56.42	56.42	0.00	0.00	56.49
Total	**0.08**	**0.46**	**0.66**	**0.00**	**0.08**	**0.01**	**0.09**	**0.00**	**0.01**	**0.03**	**0.00**	**124.36**	**124.36**	**0.00**	**0.00**	**124.46**

3.5 Architectural Coating - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.02					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.16	0.86	0.71	0.00		0.07	0.07		0.07	0.07	0.00	91.02	91.02	0.01	0.00	91.31
Total	**3.18**	**0.86**	**0.71**	**0.00**		**0.07**	**0.07**		**0.07**	**0.07**	**0.00**	**91.02**	**91.02**	**0.01**	**0.00**	**91.31**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.07	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	9.51	9.51	0.00	0.00	9.53
Total	**0.01**	**0.01**	**0.07**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**9.51**	**9.51**	**0.00**	**0.00**	**9.53**

3.5 Architectural Coating - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.02					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.13	0.58	0.65	0.00		0.03	0.03		0.03	0.03	0.00	91.02	91.02	0.01	0.00	91.31
Total	**3.15**	**0.58**	**0.65**	**0.00**		**0.03**	**0.03**		**0.03**	**0.03**	**0.00**	**91.02**	**91.02**	**0.01**	**0.00**	**91.31**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.07	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	9.51	9.51	0.00	0.00	9.53
Total	**0.01**	**0.01**	**0.07**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**9.51**	**9.51**	**0.00**	**0.00**	**9.53**

3.6 Paving - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.25	1.72	1.07	0.00		0.12	0.12		0.12	0.12	0.00	170.08	170.08	0.02	0.00	170.51
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.25**	**1.72**	**1.07**	**0.00**		**0.12**	**0.12**		**0.12**	**0.12**	**0.00**	**170.08**	**170.08**	**0.02**	**0.00**	**170.51**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.09	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	12.55	12.55	0.00	0.00	12.56
Total	**0.01**	**0.01**	**0.09**	**0.00**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**12.55**	**12.55**	**0.00**	**0.00**	**12.56**

3.6 Paving - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.15	0.91	1.05	0.00		0.04	0.04		0.04	0.04	0.00	170.08	170.08	0.02	0.00	170.51
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.15**	**0.91**	**1.05**	**0.00**		**0.04**	**0.04**		**0.04**	**0.04**	**0.00**	**170.08**	**170.08**	**0.02**	**0.00**	**170.51**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.09	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	12.55	12.55	0.00	0.00	12.56
Total	**0.01**	**0.01**	**0.09**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**12.55**	**12.55**	**0.00**	**0.00**	**12.56**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

Increase Density

Increase Diversity

Improve Walkability Design

Increase Transit Accessibility

Improve Pedestrian Network

Implement NEV Network

Provide BRT System

Expand Transit Network

Increase Transit Frequency

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unmitigated	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Health Club	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00		
Movie Theater (No Matinee)	0.00	0.00	0.00		
Regional Shopping Center	0.00	0.00	0.00		
Strip Mall	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Health Club	9.50	7.30	7.30	16.90	64.10	19.00
High Turnover (Sit Down Restaurant)	9.50	7.30	7.30	8.50	72.50	19.00
Movie Theater (No Matinee)	9.50	7.30	7.30	1.80	79.20	19.00
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.00	0.00		0.00	0.00	0.00	1,584.28	1,584.28	0.06	0.02	1,592.43
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	1,894.16	1,894.16	0.07	0.03	1,903.91
NaturalGas Mitigated	0.08	0.71	0.60	0.00		0.00	0.05		0.00	0.05	0.00	777.40	777.40	0.01	0.01	782.13
NaturalGas Unmitigated	0.08	0.75	0.63	0.00		0.00	0.06		0.00	0.06	0.00	815.06	815.06	0.02	0.01	820.02
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Health Club	485100	0.00	0.02	0.02	0.00		0.00	0.00		0.00	0.00	0.00	25.89	25.89	0.00	0.00	26.04
High Turnover (Sit Down Restaurant)	1.39533e+007	0.08	0.68	0.57	0.00		0.00	0.05		0.00	0.05	0.00	744.60	744.60	0.01	0.01	749.13
Movie Theater (No Matinee)	636660	0.00	0.03	0.03	0.00		0.00	0.00		0.00	0.00	0.00	33.97	33.97	0.00	0.00	34.18
Regional Shopping Center	138408	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00	0.00	7.39	7.39	0.00	0.00	7.43
Strip Mall	60227	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	3.21	3.21	0.00	0.00	3.23
Total		**0.08**	**0.74**	**0.63**	**0.00**		**0.00**	**0.05**		**0.00**	**0.05**	**0.00**	**815.06**	**815.06**	**0.01**	**0.01**	**820.01**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Health Club	447740	0.00	0.02	0.02	0.00		0.00	0.00		0.00	0.00	0.00	23.89	23.89	0.00	0.00	24.04
High Turnover (Sit Down Restaurant)	1.33548e+007	0.07	0.65	0.55	0.00		0.00	0.05		0.00	0.05	0.00	712.66	712.66	0.01	0.01	717.00
Movie Theater (No Matinee)	587628	0.00	0.03	0.02	0.00		0.00	0.00		0.00	0.00	0.00	31.36	31.36	0.00	0.00	31.55
Regional Shopping Center	123902	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00	0.00	6.61	6.61	0.00	0.00	6.65
Strip Mall	53915	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	2.88	2.88	0.00	0.00	2.89
Total		**0.07**	**0.71**	**0.60**	**0.00**		**0.00**	**0.05**		**0.00**	**0.05**	**0.00**	**777.40**	**777.40**	**0.01**	**0.01**	**782.13**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Health Club	370305					131.15	0.00	0.00	131.82
High Turnover (Sit Down Restaurant)	3.27418e+006					1,159.59	0.04	0.02	1,165.55
Movie Theater (No Matinee)	486000					172.12	0.01	0.00	173.01
Regional Shopping Center	848578					300.53	0.01	0.00	302.08
Strip Mall	369252					130.77	0.00	0.00	131.45
Total						**1,894.16**	**0.06**	**0.02**	**1,903.91**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Health Club	304638					107.89	0.00	0.00	108.45
High Turnover (Sit Down Restaurant)	2.87393e+006					1,017.83	0.04	0.01	1,023.07
Movie Theater (No Matinee)	399816					141.60	0.01	0.00	142.33
Regional Shopping Center	619691					219.47	0.01	0.00	220.60
Strip Mall	275256					97.48	0.00	0.00	97.99
Total						**1,584.27**	**0.06**	**0.01**	**1,592.44**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.25	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unmitigated	1.32	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.30					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	1.02					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**1.32**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.30					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.94					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**1.24**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					232.66	1.34	0.04	272.09
Unmitigated					285.12	1.68	0.05	334.38
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Health Club	2.43374 / 1.49165					17.12	0.07	0.00	19.34
High Turnover (Sit Down Restaurant)	24.0277 / 1.53368					117.11	0.74	0.02	138.75
Movie Theater (No Matinee)	21.6865 / 1.38424					105.70	0.67	0.02	125.23
Regional Shopping Center	4.47694 / 2.74393					31.49	0.14	0.00	35.57
Strip Mall	1.94811 / 1.194					13.70	0.06	0.00	15.48
Total						**285.12**	**1.68**	**0.04**	**334.37**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Health Club	1.94699 / 1.40066					14.51	0.06	0.00	16.29
High Turnover (Sit Down Restaurant)	19.2222 / 1.44013					94.53	0.59	0.02	111.84
Movie Theater (No Matinee)	17.3492 / 1.2998					85.32	0.53	0.01	100.95
Regional Shopping Center	3.58155 / 2.57655					26.69	0.11	0.00	29.97
Strip Mall	1.55849 / 1.12117					11.62	0.05	0.00	13.04
Total						**232.67**	**1.34**	**0.03**	**272.09**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					159.90	9.45	0.00	358.35
Unmitigated					319.80	18.90	0.00	716.69
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Health Club	234.56					47.61	2.81	0.00	106.71
High Turnover (Sit Down Restaurant)	942					191.22	11.30	0.00	428.53
Movie Theater (No Matinee)	307.8					62.48	3.69	0.00	140.02
Regional Shopping Center	63.46					12.88	0.76	0.00	28.87
Strip Mall	27.62					5.61	0.33	0.00	12.56
Total						**319.80**	**18.89**	**0.00**	**716.69**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Health Club	117.28					23.81	1.41	0.00	53.35
High Turnover (Sit Down Restaurant)	471					95.61	5.65	0.00	214.27
Movie Theater (No Matinee)	153.9					31.24	1.85	0.00	70.01
Regional Shopping Center	31.73					6.44	0.38	0.00	14.43
Strip Mall	13.81					2.80	0.17	0.00	6.28
Total						**159.90**	**9.46**	**0.00**	**358.34**

9.0 Vegetation

Westfield Carlsbad 35,417sf Net Development

San Diego County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Regional Shopping Center	35.417	1000sqft

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Utility Company**	San Diego Gas & Electric
Climate Zone	13	**Precipitation Freq (Days)**	40		

1.3 User Entered Comments

Project Characteristics -

Land Use - Site Development Plan - Net Change is 35,417 square feet.

Construction Phase - No construction analysis

Off-road Equipment -

Vehicle Trips - Traffic Report assume 35 trips per 1,000sf for regional shopping center (Gibson 2009, Table 15- Project Trip Generation Estimates).

Energy Mitigation - Exceed Title 24 - 20% improvement, Energy Efficient Applicances - Energy Star

Water Mitigation - Install Low-Flow Bathroom Faucet (32% reduction in flow), Low-Flow Kitchen Faucet (18% reduction in flow), Low-Flow Toilet (20% reduction in flow), Low-Flow Shower (20% reduction in flow), Use water-efficient Irrigation Systems (6.1% reduction in flow).

Waste Mitigation - Institude Recycling and Composting Services (50% reduction in waste disposal).

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2011	820.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2011	820.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.98	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.02	0.02	0.00		0.00	0.00		0.00	0.00		26.14		0.00	0.00	26.30
Mobile	3.84	7.28	32.14	0.07	7.19	0.35	7.55	0.10	0.34	0.44		5,518.78		0.24		5,523.89
Total	**4.82**	**7.30**	**32.16**	**0.07**	**7.19**	**0.35**	**7.55**	**0.10**	**0.34**	**0.44**		**5,544.92**		**0.24**	**0.00**	**5,550.19**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.98	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.02	0.02	0.00		0.00	0.00		0.00	0.00		23.40		0.00	0.00	23.54
Mobile	3.84	7.28	32.14	0.07	7.19	0.35	7.55	0.10	0.34	0.44		5,518.78		0.24		5,523.89
Total	**4.82**	**7.30**	**32.16**	**0.07**	**7.19**	**0.35**	**7.55**	**0.10**	**0.34**	**0.44**		**5,542.18**		**0.24**	**0.00**	**5,547.43**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	820.09					0.00	0.00		0.00	0.00						0.00
Total	**820.09**					**0.00**	**0.00**		**0.00**	**0.00**						**0.00**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	820.09					0.00	0.00		0.00	0.00						0.00
Total	**820.09**					**0.00**	**0.00**		**0.00**	**0.00**						**0.00**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.84	7.28	32.14	0.07	7.19	0.35	7.55	0.10	0.34	0.44		5,518.78		0.24		5,523.89
Unmitigated	3.84	7.28	32.14	0.07	7.19	0.35	7.55	0.10	0.34	0.44		5,518.78		0.24		5,523.89
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Regional Shopping Center	1,239.60	1,239.60	1239.60	2,173,388	2,173,388
Total	1,239.60	1,239.60	1,239.60	2,173,388	2,173,388

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Exceed Title 24

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.00	0.02	0.02	0.00		0.00	0.00		0.00	0.00		23.40		0.00	0.00	23.54
NaturalGas Unmitigated	0.00	0.02	0.02	0.00		0.00	0.00		0.00	0.00		26.14		0.00	0.00	26.30
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Regional Shopping Center	222.205	0.00	0.02	0.02	0.00		0.00	0.00		0.00	0.00		26.14		0.00	0.00	26.30
Total		**0.00**	**0.02**	**0.02**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**26.14**		**0.00**	**0.00**	**26.30**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Regional Shopping Center	0.198917	0.00	0.02	0.02	0.00		0.00	0.00		0.00	0.00		23.40		0.00	0.00	23.54
Total		**0.00**	**0.02**	**0.02**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**23.40**		**0.00**	**0.00**	**23.54**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.98	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	0.98	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.22					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.76					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.98**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.22					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.76					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.98**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Vegetation

Westfield Carlsbad 35,417sf Net Development

San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Regional Shopping Center	35.417	1000sqft

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Utility Company**	San Diego Gas & Electric
Climate Zone	13	**Precipitation Freq (Days)**	40		

1.3 User Entered Comments

Project Characteristics -

Land Use - Site Development Plan - Net Change is 35,417 square feet.

Construction Phase - No construction analysis

Off-road Equipment -

Vehicle Trips - Traffic Report assume 35 trips per 1,000sf for regional shopping center (Gibson 2009, Table 15- Project Trip Generation Estimates).

Energy Mitigation - Exceed Title 24 - 20% improvement, Energy Efficient Applicances - Energy Star

Water Mitigation - Install Low-Flow Bathroom Faucet (32% reduction in flow), Low-Flow Kitchen Faucet (18% reduction in flow), Low-Flow Toilet (20% reduction in flow), Low-Flow Shower (20% reduction in flow), Use water-efficient Irrigation Systems (6.1% reduction in flow).

Waste Mitigation - Institude Recycling and Composting Services (50% reduction in waste disposal).

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2011	820.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2011	820.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.98	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.02	0.02	0.00		0.00	0.00		0.00	0.00		26.14		0.00	0.00	26.30
Mobile	4.07	7.46	32.72	0.06	7.19	0.36	7.55	0.10	0.34	0.44		5,169.89		0.25		5,175.09
Total	**5.05**	**7.48**	**32.74**	**0.06**	**7.19**	**0.36**	**7.55**	**0.10**	**0.34**	**0.44**		**5,196.03**		**0.25**	**0.00**	**5,201.39**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.98	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.02	0.02	0.00		0.00	0.00		0.00	0.00		23.40		0.00	0.00	23.54
Mobile	4.07	7.46	32.72	0.06	7.19	0.36	7.55	0.10	0.34	0.44		5,169.89		0.25		5,175.09
Total	**5.05**	**7.48**	**32.74**	**0.06**	**7.19**	**0.36**	**7.55**	**0.10**	**0.34**	**0.44**		**5,193.29**		**0.25**	**0.00**	**5,198.63**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	820.09					0.00	0.00		0.00	0.00						0.00
Total	**820.09**					**0.00**	**0.00**		**0.00**	**0.00**						**0.00**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	820.09					0.00	0.00		0.00	0.00						0.00
Total	**820.09**					**0.00**	**0.00**		**0.00**	**0.00**						**0.00**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.07	7.46	32.72	0.06	7.19	0.36	7.55	0.10	0.34	0.44		5,169.89		0.25		5,175.09
Unmitigated	4.07	7.46	32.72	0.06	7.19	0.36	7.55	0.10	0.34	0.44		5,169.89		0.25		5,175.09
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Regional Shopping Center	1,239.60	1,239.60	1239.60	2,173,388	2,173,388
Total	1,239.60	1,239.60	1,239.60	2,173,388	2,173,388

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Exceed Title 24

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.00	0.02	0.02	0.00		0.00	0.00		0.00	0.00		23.40		0.00	0.00	23.54
NaturalGas Unmitigated	0.00	0.02	0.02	0.00		0.00	0.00		0.00	0.00		26.14		0.00	0.00	26.30
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Regional Shopping Center	222.205	0.00	0.02	0.02	0.00		0.00	0.00		0.00	0.00		26.14		0.00	0.00	26.30
Total		**0.00**	**0.02**	**0.02**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**26.14**		**0.00**	**0.00**	**26.30**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Regional Shopping Center	0.198917	0.00	0.02	0.02	0.00		0.00	0.00		0.00	0.00		23.40		0.00	0.00	23.54
Total		**0.00**	**0.02**	**0.02**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**23.40**		**0.00**	**0.00**	**23.54**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.98	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	0.98	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.22					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.76					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.98**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.22					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.76					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.98**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Vegetation

Westfield Carlsbad 35,417sf Net Development

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Regional Shopping Center	35.417	1000sqft

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Utility Company**	San Diego Gas & Electric
Climate Zone	13	**Precipitation Freq (Days)**	40		

1.3 User Entered Comments

Project Characteristics -

Land Use - Site Development Plan - Net Change is 35,417 square feet.

Construction Phase - No construction analysis

Off-road Equipment -

Vehicle Trips - Traffic Report assume 35 trips per 1,000sf for regional shopping center (Gibson 2009, Table 15- Project Trip Generation Estimates).

Energy Mitigation - Exceed Title 24 - 20% improvement, Energy Efficient Applicances - Energy Star

Water Mitigation - Install Low-Flow Bathroom Faucet (32% reduction in flow), Low-Flow Kitchen Faucet (18% reduction in flow), Low-Flow Toilet (20% reduction in flow), Low-Flow Shower (20% reduction in flow), Use water-efficient Irrigation Systems (6.1% reduction in flow).

Waste Mitigation - Institude Recycling and Composting Services (50% reduction in waste disposal).

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2011	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**					**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2011	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**					**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.18	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	180.44	180.44	0.01	0.00	181.37
Mobile	0.69	1.29	5.97	0.01	1.14	0.06	1.21	0.02	0.06	0.08	0.00	866.17	866.17	0.04	0.00	867.02
Waste						0.00	0.00		0.00	0.00	7.55	0.00	7.55	0.45	0.00	16.92
Water						0.00	0.00		0.00	0.00	0.00	18.46	18.46	0.08	0.00	20.85
Total	**0.87**	**1.29**	**5.97**	**0.01**	**1.14**	**0.06**	**1.21**	**0.02**	**0.06**	**0.08**	**7.55**	**1,065.07**	**1,072.62**	**0.58**	**0.00**	**1,086.16**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.18	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	167.55	167.55	0.01	0.00	168.42
Mobile	0.69	1.29	5.97	0.01	1.14	0.06	1.21	0.02	0.06	0.08	0.00	866.17	866.17	0.04	0.00	867.02
Waste						0.00	0.00		0.00	0.00	3.77	0.00	3.77	0.22	0.00	8.46
Water						0.00	0.00		0.00	0.00	0.00	15.64	15.64	0.06	0.00	17.56
Total	**0.87**	**1.29**	**5.97**	**0.01**	**1.14**	**0.06**	**1.21**	**0.02**	**0.06**	**0.08**	**3.77**	**1,049.36**	**1,053.13**	**0.33**	**0.00**	**1,061.46**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**					**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**					**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.69	1.29	5.97	0.01	1.14	0.06	1.21	0.02	0.06	0.08	0.00	866.17	866.17	0.04	0.00	867.02
Unmitigated	0.69	1.29	5.97	0.01	1.14	0.06	1.21	0.02	0.06	0.08	0.00	866.17	866.17	0.04	0.00	867.02
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Regional Shopping Center	1,239.60	1,239.60	1239.60	2,173,388	2,173,388
Total	1,239.60	1,239.60	1,239.60	2,173,388	2,173,388

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Exceed Title 24

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.00	0.00		0.00	0.00	0.00	163.68	163.68	0.01	0.00	164.52
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	176.11	176.11	0.01	0.00	177.01
NaturalGas Mitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	3.87	3.87	0.00	0.00	3.90
NaturalGas Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	4.33	4.33	0.00	0.00	4.35
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Regional Shopping Center	81104.9	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	4.33	4.33	0.00	0.00	4.35
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**4.33**	**4.33**	**0.00**	**0.00**	**4.35**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Regional Shopping Center	72604.8	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	3.87	3.87	0.00	0.00	3.90
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**3.87**	**3.87**	**0.00**	**0.00**	**3.90**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Regional Shopping Center	497255					176.11	0.01	0.00	177.01
Total						**176.11**	**0.01**	**0.00**	**177.01**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Regional Shopping Center	462156					163.68	0.01	0.00	164.52
Total						**163.68**	**0.01**	**0.00**	**164.52**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.18	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unmitigated	0.18	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.04					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.14					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.18**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.04					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.14					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.18**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					15.64	0.06	0.00	17.56
Unmitigated					18.46	0.08	0.00	20.85
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Regional Shopping Center	2.62365 / 1.60804					18.46	0.08	0.00	20.85
Total						**18.46**	**0.08**	**0.00**	**20.85**

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Regional Shopping Center	2.09892 / 1.50995					15.64	0.06	0.00	17.56
Total						**15.64**	**0.06**	**0.00**	**17.56**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					3.77	0.22	0.00	8.46
Unmitigated					7.55	0.45	0.00	16.92
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Regional Shopping Center	37.19					7.55	0.45	0.00	16.92
Total						**7.55**	**0.45**	**0.00**	**16.92**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Regional Shopping Center	18.595					3.77	0.22	0.00	8.46
Total						**3.77**	**0.22**	**0.00**	**8.46**

9.0 Vegetation

Revised Equipment Mix to Account for Maximum Equipment per Phase for Busiest Day

		Demolition		Grading		Building Construction		Architectural Coatings		Paving	
Offroade Equipment Type	**Horsepower**	**Pieces**	**Hours**	**Pieces**	**Hours**	**Pieces**	**Hours**	**Pieces**	**Hours**	**Pieces**	**Hours**
Aerial Lift	34	4	8			10	8	3	8		
Air Compressors	78	2	8			2	8	1	8		
Bore/Drill Rigs	82										
Cement and Mortar Mixers	9			1	8	2	8	1	8	1	8
Concrete/Industrial Saws	81	1	8								
Cranes	208	1	4			2	4				
Crawler Tractors	82	1	8	5	8					4	8
Crushing/Proc. Equipment	85	1	4								
Dumpers/Tenders	16	10	4	20	4					20	4
Excavators	157	2	8	3	8	1	4				
Forklifts	149	2	8			4	8	1	8		
Generator Sets	84	2	8			3	8				
Graders	162			2	8					1	8
Off-Highway Tractors	160			1	8	1	8			1	4
Off-Highway Trucks	381			2	8					1	4
Other Construction Equipment	327	2	4	2	4	2	4			2	4
Other General Industrial Equipment	150			1	4	4	4				
Other Material Handling Equipment	196										
Pavers	89									2	8
Paving Equipment	82									4	8
Plate Compactors	8					2	8			2	8
Pressure Washers	13					2	8				
Pumps	84					1	8				
Rollers	84			2	8					3	8
Rough Terrain Forklifts	83	1	8			2	8	1	8		
Rubber Tired Dozers	358	1	4	2	4					2	4
Rubber Tired Loaders	87	1	8	2	8					2	8
Scrapers	356										
Signal Boards	6										
Skid Steer Loaders	37	4	8	2	8	1	8			2	8
Surfacing Equipment	392										
Sweepers/Scrubbers	88	1	4			1	4			1	4
Tractors/Loaders/Backhoes	75	2	8	2	8	2	8			2	8
Trenchers	69										
Welders	46					8	8				